

ANDREW MONSON

From THE PTOLEMIES
to THE ROMANS

Political and Economic Change in Egypt



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From the Ptolemies to the Romans

This book gives a structured account of Egypt's transition from Ptolemaic to Roman rule by identifying key relationships between ecology, land tenure, taxation, administration, and politics. It introduces theoretical perspectives from the social sciences and subjects them to empirical scrutiny using data from Greek and Demotic papyri as well as comparative evidence. Although building on recent scholarship, it offers some provocative arguments that challenge prevailing views. For example, patterns of land ownership are linked to population density and are seen as one aspect of continuity between the Ptolemaic and Roman periods. Fiscal reform, by contrast, emerges as a significant mechanism of change not only in the agrarian economy but also in the administrative system and the whole social structure. Anyone seeking to understand the impact of Roman rule in the Hellenistic east must consider the well-attested processes in Egypt that this book seeks to explain.

Andrew Monson is Assistant Professor in the Department of Classics, New York University. He has published or presented aspects of his research in journals and conferences devoted to dialogue between history and the social sciences; he is currently working on an edition of a land survey from early Ptolemaic Egypt and a project comparing fiscal regimes in the Hellenistic world.

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For my mother

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5.2 Roman land prices Median = 295 dr. \approx 29.5 art. of wheat *Source*: Drexhage (1991: 13--7, 123--34); cf. Maresch (1996: 208--9); using mean prices, the Roman average is 316 dr./ar. \approx 28.7 art./ar. (11 Rom. dr./art.).

Preface

This book is an expanded and revised version of my Ph.D. dissertation defended at Stanford University in June 2008. My deepest thanks go to my advisor Joseph Manning for introducing me to Ptolemaic history and for guiding me into the profession. In formulating my own arguments, his scholarship and our many exhilarating discussions played an essential role. Walter Scheidel has been a perpetual source of provocative ideas and advice, which have encouraged me to build and expand on the original concept of my dissertation. Besides being an inspiring teacher, Ian Morris indelibly influenced my thinking about the aims and methods of history writing. He and Walter Scheidel organized graduate seminars and conferences on empires and state formation that made me appreciate the value of cross-cultural comparisons. The whole Stanford community furnished an extraordinarily creative and stimulating environment for graduate study in ancient history. Along with those already mentioned, another key contributor to Stanford's intellectual life, Josiah Ober, gave me insightful comments on several chapters of the dissertation. To these four members of my Ph.D. committee and to Stephen Haber, who served on my defense committee, I extend my sincere gratitude.

In addition to Stanford University and its faculty, several organizations and individuals afforded me opportunities to carry out research on this book. Todd Hickey and the Center for the Tebtunis Papyri furnished a welcoming and stimulating environment during my frequent visits to Berkeley. A fellowship from the German Academic Exchange Service (DAAD) enabled me to study with Karl-Theodor Zauzich and Günter Vittmann at the University of Würzburg in 2005/2006. I thank them for sharing their immense knowledge of the Demotic sources, which helped me identify new material for writing about the Egyptian agrarian economy. The Commission for Ancient History and

Epigraphy in Munich granted me a two-month Jacobi fellowship in 2007 sponsored by the Jacobi and the Gerda Henkel Foundation. The ideal working conditions there allowed me to make rapid progress on my dissertation, for which I thank Christof Schuler and Rudolf Haensch.

Since 2008 I have had gracious colleagues in the Classics department at New York University, who have shielded me from burdensome duties and created a convivial atmosphere. Above all I would like to single out Markus Asper, Joy Connolly, David Levene, and Michael Peachin for their support and encouragement. The Classics department at Tel Aviv University kindly hosted me as a visiting scholar in summer 2009 thanks to Jonathan Price, who helped make the arrangements. Moreover, I wish to acknowledge the Alexander von Humboldt Foundation along with my hosts, Andrea Jördens and Joachim Quack, for a fellowship in Heidelberg to begin a new project growing out of this book, which has enabled me to insert a few final corrections.

The generosity of my friends and colleagues has been indispensable. Roger Bagnall read the entire dissertation after it had been submitted and provided several pages of valuable feedback. In response to his remarks many sections of the book were expanded and rearranged, which has enhanced the clarity of its core argument. I would also like to thank my copy editor Andrew Dyck and the two anonymous reviewers for Cambridge University Press, who read the earlier drafts meticulously, made helpful suggestions, and saved me from a number of errors. Charikleia Armoni, Philip Brown, Daniel Hoyer, Dominic Rathbone, and Dorothy Thompson read earlier versions of certain sections and gave me useful comments. Others shared with me information and forthcoming work, in particular, Katherine Blouin, Ruey-Lin Chang, Thorolf Christensen, Roger Flower, Saskia Hin, Michael Jursa, Brian Muhs, Wolfgang Wegner, and Uri Yiftach-Firanko. To acknowledge by name the numerous people with whom I had the pleasure of discussing my work and from whom I received assistance would be impossible, but they should know that I am grateful.

There are three individuals who deserve extraordinary recognition. In writing this book I owe an enormous debt to Christelle Fischer-Bovet. She has generously shared the fruits of her own hard work and her expertise in Ptolemaic military and social history. We read and translated a number of relevant Greek papyri and inscriptions together in the course of our research. I benefited from conversations with her about virtually every issue and problem discussed here. My wife Carolin Arlt has read each chapter at least once and given me valuable suggestions. She is gifted when it comes to spotting my mistakes and improving my obscure passages. Her greatest contribution to this book was the precious time that we spent together while it was being written in San Francisco, New York, Tel Aviv, and Würzburg. Most of all, I would like to thank my mother Debra Phelps for supporting me in countless ways before and throughout my studies. To her this book is dedicated.

Abbreviations and notes on the text

The editions of Greek and Demotic papyri and ostraka are abbreviated according to the conventions in the *Checklist of Editions of Greek, Latin, and Coptic Papyri, Ostraca and Tablets*, Web Edition (<http://scriptorium.lib.duke.edu/papyrus/texts/clist.html>). An equal (=) sign is usually used to indicate new editions: for example, P. Eleph. Dem. 6 = P. Bürgsch. 14. Those documents not included in the checklist are cited using an inventory number or conventional designation followed by a reference to the publication: for example, P. Haun. inv. 407 = Christensen (2002). For convenience, the date and provenance have often been given in parentheses alongside references in the footnotes of this book. Sometimes both the village or city and the name of the nome or administrative division (typically ending in -ite) are given: for example, P. Bour. 42 (166/167 CE; HieraNesos, Arsinoite). If the village or city is uncertain or irrelevant, only the name of the nome is given. For example, P. Tebt. I 5 (118 BCE; Arsinoite). *PP* is the abbreviation used for the *Prosopographia Ptolemaica*, a multi-volume reference work edited by W. Peremans, E. van 't Dack, and others, and published in Leuven as part of the series *Studia Hellenistica*.

Greek and Egyptian words

In many instances the arguments in this book depend on the interpretation of terms used in the ancient sources. To make it easier for non-specialist readers, it seemed preferable to use an English translation wherever possible and to provide the original word or phrase only in parentheses. There are a few exceptional terms that needed to be incorporated into the main text because their English renderings are too misleading, but these are then thoroughly defined and discussed. Examples include the Greek term *katoikos* (plural *katoikoi*), which indicates a special status of military settlers and the Grecized Egyptian term *lesonis* (plural *lesones*), which refers to a temple official. Latin transliteration has been consistently adopted to facilitate pronunciation and a macron has been added to distinguish long vowels occurring in the last syllable. Only in a few longer quotations in the footnotes did the use of the Greek script seem warranted.

A further note on pronunciation may be helpful for readers who are unfamiliar with the Egyptian language. Diacritical marks and special signs are needed to represent particular sounds. The aleph (ʾ) and ayin (ʿ) are usually simplified in English as an *a*-sound and the *y* and *yod* (י) as an *ee*-sound, while the *š* represents a *sh*-sound and the *ṭ* a *ch*-sound. Other diacritical marks are used to signify aspirated or guttural consonants. Because neither the hieroglyphic nor the Demotic writing system employed vowels, these do not show up in the transliteration. When articulating the words, however, it is conventional to insert an *e*-sound between consonants in order to make them pronounceable. For instance, the Egyptian word for a temple estate ḥtp-nṯr can be read out loud as *hetep-necher*. Such transliterations reproduce the Egyptian scribes' historical orthographies, which do not necessarily correspond to the spoken language of the Greco-Roman period anyway; hence the discrepancy, for example, between the Egyptian temple official *mr-šn* or

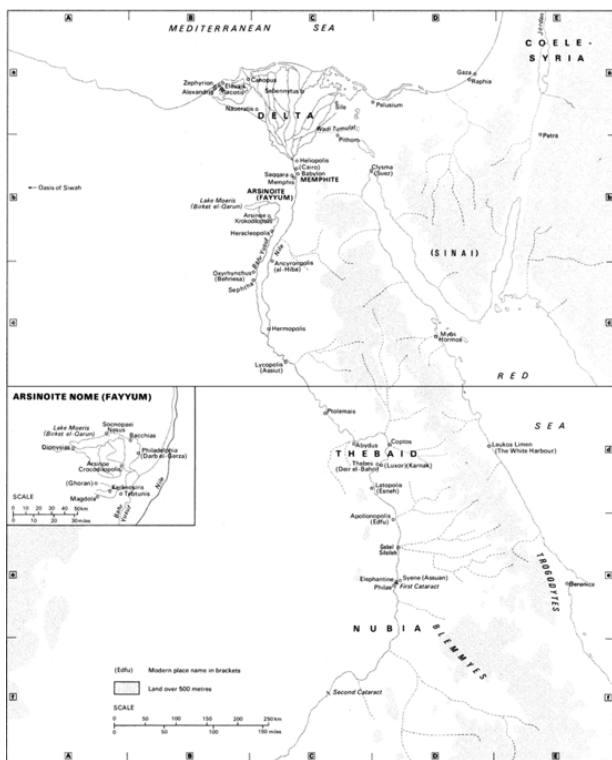
mer-shen and its pronunciation in Greek as *lesonis*.

Money and measures

Greek and Egyptian money		Capacity and area	
obol	8 chalkoi	artaba	38.78 liters
drachma	6 obols	aroura	2,756 m ²
talent	6000 drachmas		
deben	20 drachmas		

Map of Egypt

Map of Egypt, from the *Cambridge Ancient History*, 2nd edn., vol. VII.1, pp. 120–1



Part I Introduction

Chapter 1 The political economy of Egypt

Introduction

The year 30 BCE conveniently marks a double transformation. Egypt's annexation by Rome ends what historians label the Hellenistic period (323–30 BCE). It extinguished the last of the Macedonian dynasties that had established kingdoms after Alexander the Great died in 323 BCE. From Rome's perspective, it marks the end of its civil wars and the transition from a republic to a monarchy. There was finally peace in the competition between Rome's generals and across the Mediterranean, where warring kingdoms and fractious federations gave way to a single world empire. Against the background of Egypt's much older pharaonic traditions, Cleopatra's downfall represents an even bigger transformation. Egypt had been an imperial province before, under the Persians, but the stability and longevity of Roman rule would facilitate deep, irreversible changes in the social structure and the agrarian economy. Despite its innovations, Ptolemaic Egypt retained many characteristic Egyptian institutions that can be traced back for centuries and even millennia, from the organization of temple estates to royal ideology. Within a relatively short span of time, one or two centuries, these became almost unrecognizable under Roman rule.

One cannot, however, reduce such a fundamental transformation of the political and economic structure to a single year or a single reign, however long and influential Augustus' may have been. Egypt's transition has the potential to illuminate the gradual processes by which the population of the Hellenistic east adjusted to the realities of Roman rule, giving rise to a new provincial order. On the ruins of old hierarchies emerged new interregional networks that arguably linked the empire and enhanced its aggregate

prosperity. But it did not happen all at once, nor did it benefit everyone. One of the principal aims of this book is to show the impact of empire on the structure and performance of the agrarian economy in Egypt.

The wealth of documentary evidence from Egypt holds out the potential for a finer-grained analysis than would be possible for virtually anywhere else in the ancient world. Although Egypt was not a unique province within the Roman empire, the very flexibility of the provincial administration – its propensity for adapting and building on existing institutions rather than replacing them outright – causes one to doubt whether any province was typical. The goal should not be to extrapolate from Egypt to fill in the gaps in our knowledge about the Hellenistic and Roman world. The Egyptian evidence can be put to better use. The transition from Ptolemaic to Roman Egypt furnishes a natural experiment with which to test models of economic development and political economy. If the logic of such models is consistent with historical evidence, a study of this kind may provide empirical support for theoretical approaches that appeal to scholars working in a variety of disciplines from political science and economics to anthropology and geography. For ancient historians, this approach can generate hypotheses that potentially explain independent phenomena in other parts of the Hellenistic and Roman world.

The scope of this study is fixed by the two political regimes that are the objects of comparison. The Ptolemaic period begins with Alexander's death in 323 BCE and ends with Cleopatra's in 30 BCE but the evidence is unevenly distributed with much of it coming from the third and second centuries BCE. Whereas the Ptolemaic dynasty ruled from Alexandria, after 30 BCE Egypt was an imperial province governed by a prefect sent by the emperor from Rome. This study extends through the early Roman period, down to roughly 200 CE, after which time the advent of self-governing metropolitan councils and the extension of Roman citizenship introduced further changes that need not be considered here. Instead of approaching this five-hundred-

year period as a historical narrative, the book juxtaposes the two regimes, sketching their structures and characteristics even if it is often necessary to trace particular institutions over time. To understand the impact of political change on agrarian institutions one needs to recognize the relationships among multiple factors. Some factors that have shaped the institutions governing economic activity, including the hydrology of the Nile, demography, and legal institutions, are evident only from a long-term perspective.

Admittedly, the broad scope has its drawbacks too. It forces one to simplify issues that are not yet fully understood and that require further specialized study. The transitional period – the decades before and after 30 BCE – is one of the worst-documented in the whole Greco-Roman period in Egypt. This poses a serious methodological problem.¹ The sources from these decades are vital to the arguments in this book but often defy easy interpretation. To concentrate solely on them risks losing sight of the larger structural changes that make this transitional period so important. The chronological scope has to be narrow enough to identify the changes from Ptolemaic to Roman rule but wide enough to draw in relevant information about the main features of the two regimes. Even these chronological bounds are occasionally breached in this book in order to consider sources from earlier and later Egyptian history for the sake of comparison or to illustrate long-term patterns.

The natural environment is integral to the formation and maintenance of agrarian institutions. Ecological history provides a complementary perspective to the intrinsically anthropocentric approaches of political and economic history. Geographies shape incentives and constrain economic development, though they are not deterministic. Land rights and water management are prime examples of how humanly devised political and legal institutions respond to natural scarcities. Conversely, however, human institutions create artificial scarcities or intensify environmental effects. Some people are able to redirect the flow of natural resources or monopolize them. Not even the environment itself is necessarily an exogenous force. It too is

sensitive to human agency, for example, when resources are depleted through neglect or overuse and when degradation sets in such as the salinization of the soil.

Only after controlling for geography can one isolate and identify the political impact on the agrarian economy. The transition from Ptolemaic to Roman rule in Egypt provides a diachronic perspective with less interference from regional factors and local traditions, which may have altered the effects of Roman rule in other areas of the Mediterranean. This restricted geographical scope, however, also means that it can claim to be no more than a single case study. If the mechanisms of institutional change are well established, it should be possible to find at least indirect evidence for them even in quite different and thus independently observable cases. The more theoretical aspects of this book are meant to show the explanatory power of certain concepts for Egypt and to stimulate further comparative study. If one contrasts the anarchic interstate relations and internal pressures that prevailed in the time of the Hellenistic kingdoms and the Roman Republic, one begins to make out a fundamental political shift in Egypt and across the Mediterranean after 30 BCE. The Romans generated variations of a distinctive pattern of governance, which the Egyptian case seems to exemplify.

The agrarian economy

Agrarian institutions are the main emphasis in this book, above all property rights to arable land and the taxation of agricultural production. What prompted this study was a series of new discoveries about land tenure and taxation. Although Greek was the language of the Ptolemaic rulers and administration, Egyptian scribes continued to write in Demotic, a late phase of the Egyptian language written in a cursive script derived from hieroglyphic and hieratic. Recently edited land surveys in Greek and Demotic reveal vast amounts of private land in the Nile Valley as well as communal forms of land tenure in the Fayyum.² Both of these challenge established views about private ownership

and tenancy on royal land in Ptolemaic Egypt. The bilingual study of Greek and Demotic receipts has illuminated a system of harvest-tax collection that was in operation since at least the New Kingdom and that was curtailed under Roman rule.³

All of this makes it possible to approach the better-known sources for land tenure and taxation in Roman Egypt from a new perspective. Some neglected texts of the Roman period have also repaid further study with greater attention to the Ptolemaic background.⁴ The analysis of land tenure and taxation yields insights into more profound changes in the Egyptian agrarian economy. It provides the key to understanding agricultural intensification, the decline of Egyptian temples, the emergence of a new landowning elite in the growing cities of the Egyptian countryside, and the gradual replacement of the traditional bureaucratic administration with compulsory public services.

Agriculture constituted the greatest share of production in antiquity, making agrarian institutions a good indicator of the overall structure of the economy. Modern historians often point to an agricultural revolution in the Netherlands and especially in England that generated real per capita growth, contributing to the later industrial revolution. Both countries underwent changes that produced a freer labor market, land privatization, and fiscal incentives for capital investment that created conditions favorable for subsequent technological innovation.⁵ The potential for gains in agriculture to stimulate other types of activity, including urban industries and trade, means that agrarian institutions ought to lie at the heart of the debate over economic growth in the Roman empire. It was the expansion of agrarian land and labor markets in the Roman period that seems to have provided the stimulus for an expanding urban economy both in Egypt and across the Mediterranean. There is some evidence that urban economic activity in Egypt such as craft production flourished under Roman rule.⁶ Empire-wide integration may likewise have contributed to economic growth in the early Roman period.

The administrative organization that was responsible for

monitoring land use, enforcing property rights, and collecting taxes is another component of the agrarian institutional structure that is treated in this book. How this administration redistributed agricultural production in Egypt reflects disparities of political influence as well as the rulers' demands. Continuing an ancient Egyptian tradition, the Ptolemies recognized the rights of temples to their estates and even made new donations to demonstrate their piety. These were above all fiscal estates, enabling temples to receive harvest taxes for the maintenance of the temple and its hereditary priestly elite just as the state received harvest taxes on royal land. It was a redistributive economy that ensured that royal and temple office-holders captured a large share of the cultivators' agricultural production and that the distribution of wealth mirrored social and political inequalities. The Roman conquest radically changed this relationship by confiscating temples' fiscal estates and abolishing redistributive harvest taxes except on public land.⁷

Wherever the temple or state administration was involved, there could also be opportunities for the officials themselves to profit from the activities that they supervised. In the Ptolemaic period, holding a state or temple administrative post appears to have been one of the primary means of enrichment, sometimes by illicit means. The changes in agrarian institutions under Roman rule can be linked with the development of a liturgical system of administration, where landowners were compelled to undertake the provision of public services at their own expense. It was a gradual process that led to the development of metropolitan urban centers, whose autonomy was established only in 200 CE with the right to have a governing council (*boulê*), typically composed of prominent landowners.⁸

Agrarian institutions shape the incentives for economic activity by structuring the relationships of tenants to their landlords and of peasants to state and temple hierarchies. In many villages of Ptolemaic Egypt a landowner's rights depended on contracts he or she made before local witnesses

and a temple notary. One's relationship to the community and to the tenants who occasionally performed labor on the land was closer than it would be in a world like Roman Egypt, where property rights were recorded in central archives. These enabled landowners to live in a metropolis and to manage estates dispersed across many villages without fearing that their rights would go unrecognized if they did not maintain social ties to each place.⁹ To what extent the increasing importance of market mechanisms created tensions between propertyless peasants and landowners is unclear. On the face of it, social tensions were even higher under the Ptolemaic royal economy, where the redistribution of peasant surplus to status-based elites played a larger role.

Framing the transformation of the agrarian economy in terms of redistributive versus market mechanisms echoes the language of Polanyi. For him, the transition to the modern global society and economy is regarded negatively, as a cause of social disintegration.¹⁰ However, only by relativizing the concept can one hope to test this theory on independent cases. For example, Ober argues that at some periods and places in antiquity, specifically in classical Athens, social relations changed in ways that can best be described as modernization. To define this process he adopts Giddens' three criteria of modernity: "1. separation and zoning of time and space (which he calls 'distanciation'), 2. the development of 'disembedding mechanisms' that 'lift out' social activity from localized contexts (including government administration), and 3. the reflexive appropriation of expert knowledge."¹¹ If one defines modernity in such sociological terms, then one could perhaps also interpret the integration of the early Roman empire as a movement in that direction. Roman rule in Egypt arguably accelerated the growth of impersonal markets at the expense communal organization and state or temple redistribution. The social and political stability of Roman rule in Egypt compared with the Ptolemaic period lends little support to Polanyi's theory, though admittedly other factors were also at play.

Current scholarship tends to describe Roman land

privatization as the decisive factor for breaking free from traditional constraints on agrarian markets in Egypt. Some go so far as to suppose that the very notion of private ownership was introduced to Egypt in the Roman period under the influence of Roman law.¹² This view rests on too narrow a conception of ownership and conflicts with a growing body of evidence from Ptolemaic Egypt for private land rights. Even contract registration and state archives for enforcing property rights in Roman Egypt had Ptolemaic precursors. The assimilation of Egyptian land rights with Roman legal categories may indeed reflect a Roman attitude that favored the protection of provincial property rights. It would be a mistake to dismiss entirely the impact of the Roman administration on Egyptian land tenure. On the other hand, one of the central claims of this book is that fiscal reforms proved to be a much more important break with Ptolemaic institutions and to underlie changes in temple organization, administration, and social structure.

Agrarian institutions are analyzed in this book from two complementary angles. One addresses the relationship between institutional structure and economic performance. The other concerns the relationship between politics and institutional change. The concept of an institution and its significance for understanding economic action are further discussed in this chapter. To use the economist Douglass North's simple metaphor of institutions as rules of the game, this book explores how different rules in Egypt affected landholding patterns, investment, and production. Likewise, it asks how certain institutions remained stable while others changed over time. The easy and obvious answer is that the government creates the institutional structure, especially when it comes to property rights, taxation schemes, and administrative controls, which shape economic incentives. The transition from Ptolemaic to Roman rule ought to highlight the role of politics in the formation of agrarian institutions that affected economic performance. However, government is not a completely external force that shapes society. Even monarchs must respond to endogenous pressures from the competing interests of their agents and their subjects. While the direct impact of Roman rule on

Egyptian institutions can be detected, the government was reacting to changes as well as imposing them.

To grapple with the complexity of simultaneous governmental and social changes affecting institutions, the historian's basic tools – primary sources – cannot provide a full picture. This study employs models based on theoretical propositions that simplify reality and predict the relationship between various factors. Even traditional historians implicitly use models. Articulating the theoretical and conceptual basis for the models enables later scholars to recognize the starting assumptions and overarching ideas, if only so that they can more easily refine or dismiss them when they are no longer consistent with the evidence. The book is unquestionably the product of its time, confronting historical issues that have been neglected or misunderstood in the past. The social scientific literature that has influenced its approach stems from other disciplines, whose methods and objectives are not always identical to the ones pursued here. It is therefore useful to set out the issues and methodology of this book against the backdrop of the intellectual currents from which it arose.

From ptolemaic to roman rule

The Roman administration in Egypt was no mere continuation of the Ptolemaic monarchy. Lewis has argued that the term Greco-Roman Egypt is a misnomer because Hellenistic and Roman Egypt were so different. There is now broad consensus for what he dubbed as “the Romanity of Roman Egypt.”¹³ The introduction of compulsory services broke with the older bureaucratic traditions of appointment to office. A new elite emerged with wealth based on land ownership and status privileges. They held the most important public offices in the nome capitals. Certainly for the period after 200 CE, after the emperor Septimius Severus granted an autonomous city council to each nome metropolis in Egypt, hardly anyone would deny the rupture with Ptolemaic political institutions, social structures, and economic organization. The prevailing consensus holds that

changes in this direction were already underway by the early first century or gradually introduced thereafter. Lewis and others attribute them to Augustus himself, claiming that he laid the groundwork with a comprehensive set of administrative and legal reforms.¹⁴

This view tends to oversimplify institutional change by reducing all differences to the impact of the new regime. Abandoning the old idea that the Romans simply took over existing institutions without change, it introduces an equally radical position whereby the Romans transformed the administration, economy, society, and religion top-down in accordance with Roman cultural beliefs and legal principles. Lewis later moderates his statement by admitting some continuity, especially the domain of agricultural production and peasant customs.¹⁵ However, his views about the introduction of rigid class barriers and about the demise of the Demotic script illustrate the causal force that he ascribes to a Roman disdain for Egyptian institutions.¹⁶

Haensch has recently rekindled the debate with a direct challenge to the consensus of institutional rupture.¹⁷ He argues that keeping local structures intact was “a central principle of Roman provincial administration – and one of the secrets of their success.”¹⁸ The examples that Haensch cites come primarily from the administrative sphere, where the Romans took over or lightly modified Ptolemaic offices and institutions. Whether Augustan reforms played a direct role in the municipalization of the nome capitals has also been questioned. The Egyptian nome capitals had no political autonomy of their own and were governed by state officials until the introduction of town councils in 200 CE.¹⁹ A few specialists in Ptolemaic history have sought, not very persuasively, to identify continuities with the municipal institutions of Roman Egypt.²⁰ Lewis' thesis never found solid ground among legal historians, who note the persistence of Egyptian and Greek law long after the Roman conquest.²¹ Finally, Egypt's geography, especially the annual rhythm of the Nile flood, must have limited the scope for institutional change.²² Such continuities are just as important as the ruptures for understanding the impact of

the Roman empire.

Lewis' thesis was a necessary corrective to the view of an unbroken continuity between Ptolemaic and Roman Egypt and the uniqueness of the province within the Roman empire. Yet the new consensus has contributed to a specialization of scholars in either Ptolemaic or Roman Egypt. This is unfortunate because it means that little research has been done on the actual process of institutional change from Ptolemaic to Roman rule. Partly this is due to the relative scarcity of textual evidence for the transitional period between 100 BCE and 100 CE.²³ The criticism of the only recent book to bridge this gap illustrates how challenging it is to master the scholarship on both periods.²⁴ Despite these risks, however, a new approach is sorely needed because Lewis' influential view of discontinuity crystallized just as the study of Ptolemaic Egypt was beginning a new phase of revisionism.

The far-reaching changes envisioned in Roman Egypt are based on (often implicit) contrasts with Ptolemaic Egypt, especially with its supposedly centralized, bureaucratic regime that prohibited private ownership. During the second half of the twentieth century, a number of scholars were already challenging these conceptions. Bingen and Samuel rightly criticized the supposed rationality and efficiency of the Ptolemaic bureaucracy. They stressed instead the extreme difficulty the state had in monitoring its agents and controlling economic production. This led to a greater appreciation of the role of private entrepreneurs providing the capital and expertise to manage estates for absent soldiers and to carry out economic functions on behalf of the state.²⁵ The modification of Rostovtzeff's view of the royal economy even created an opening for the existence of private landownership to gain wider recognition.²⁶

Most of the Greek sources from the Ptolemaic period come from the Fayyum or deal with military settlers, so the Egyptian sources are essential for getting a balanced picture. Greek papyrologists have tended to underestimate the Ptolemies' reliance on Egyptian intermediaries, especially temple personnel, and to exaggerate Egyptians' exclusion

from the acquisition of rank and status in the army and administration. A fundamental shift in Ptolemaic studies is associated with the Leuven School and its focus on archives, especially its attempt in the past few decades to integrate Demotic and Greek papyrology. Among the points raised in this scholarship that modify older views are the prominent role of the Egyptian priesthood under Ptolemaic rule, the double identity and intermarriage between Greeks and Egyptians, and the role of Egyptians as landowners.²⁷ The Fayyum was an exceptional region, which had a unique ecology and required direct state involvement for its reclamation and settlement. The concentration of military settlers there and the absence of private land were not typical of the rest of Egypt.

The putative differences in land tenure between the Ptolemaic and the Roman period are crucial to the whole debate about institutional change. Rostovtzeff's book on agrarian institutions, published in 1910, has been probably the most influential study of that aspect of Ptolemaic and Roman Egypt yet written. In this early phase of his writing, Rostovtzeff argued that private land ownership was unknown in Ptolemaic Egypt except for gardens and orchards.²⁸ Despite his later admission that there was private arable land, it was his earlier view that found general acceptance.²⁹ The more negative portrayal was an integral part of Rostovtzeff's larger conception of Ptolemaic Egypt as a planned economy that oversaw the agricultural production carried out by downtrodden peasants on royal land. For him the transition to Roman rule was marked by institutional continuity since he believed that the bulk of the land was still in state ownership and was worked by a suppressed peasantry. Scholars have gradually challenged Rostovtzeff's interpretations, particularly concerning state ownership and centralized production.³⁰

The view of continuity that Lewis criticized tended to regard royal or public land as the most extensive category in early Roman Egypt. It was supposedly the legacy of Ptolemaic royal ownership and the alleged confiscation of temple estates under Augustus. Rowlandson's study of land

tenure in Roman Oxyrhynchus demonstrates that the impression of extensive state-owned land is based on the Fayyum and is inconsistent with the prevalence of private land in the Nile Valley during the Roman period.³¹ Parassoglou casts further doubt on the extent of state-owned land in early Roman Egypt. Some landed estates (*ousiai*) not belonging to the emperor may have been acquired as private property, although Julio-Claudian emperors clearly made temporary gifts of such land to reward supporters and friends much as the Ptolemies had done.³² Finally, the confiscation of temple estates in early Roman Egypt has been exaggerated and misunderstood by previous scholars. Much temple land had already been privately owned in the Ptolemaic period. After the Roman reforms, most temples no longer managed their estates, but the administration recognized individual property rights on temple land.³³

Jördens' recent study of the Roman administration in Egypt, concentrating on the role of the prefect, contains a wealth of detail supporting the thesis that Roman reforms in Egypt reflect more general imperial policies. She lays out a strong case against the old idea that Egypt was politically and constitutionally unique within the Roman provincial administration.³⁴ The subordination of the Roman prefect to the emperor, above all in fiscal matters, rendered him a relatively weak figure compared to the Ptolemaic king. Being subject to a distant emperor introduced entirely new power relations that undermined the influence of earlier groups such as the Egyptian temples and Greco-Egyptian soldiers on the fiscal and legal institutions.³⁵ Another theme of her book is the earnest effort on the part of the Roman imperial administration to promote the well-being of the productive population and to rein in the power of rapacious local officials.³⁶ The one section in Jördens' book that jars with her persuasive account of institutional change is about fiscal institutions, where she overestimates the continuity with Ptolemaic Egypt.³⁷ The oft-repeated notion that the Romans took over the Ptolemaic land-taxation system without any major changes requires serious qualifications.³⁸

The creation of private property rights to arable land is

frequently cited as the centerpiece of Augustan reform in Egypt. Tomsin emphasizes the impact of Roman legal principles on land categories and administration in Roman Egypt, especially the equivalence of the terms for public and private land (*demosia gē* and *idiotikē gē*) in Greek to the Latin distinction between *ager publicus* and *ager privatus*.³⁹ Lewis echoes this idea, ascribing privatization to the will of the Roman emperors: "In the age-old concept that the Ptolemies continued from the Pharaohs, the land of Egypt was a *Königseigentum*, from which the king made grants at his pleasure. Abandoning this concept, which was alien to Roman tradition and practice, the Roman emperors frankly encouraged the acquisition of Egyptian land in full-fledged private ownership."⁴⁰ Even more recently, Bowman and Rathbone suggest that the hereditary accumulation of land was not allowed in Ptolemaic Egypt.⁴¹

Manning's work on the Upper Egyptian land-tenure regime in the Ptolemaic period highlights the Egyptian tradition of property rights.⁴² This accords with recent scholarship on ancient Mesopotamia, which has similarly revised earlier paradigms that denied the existence of private land ownership.⁴³ One implication of Manning's work is that there may be more continuity in land rights from the Ptolemaic to the Roman period than is usually thought. Surprisingly, he draws the opposite conclusion, endorsing the common opinion that there was discontinuity in land tenure, which he ascribes to the influence of Roman law: "The rise of the local propertied class, of course, has to be understood in the light of Roman law and private property guarantees."⁴⁴ Nevertheless, Manning's challenge to the reality of royal ownership in Ptolemaic Egypt forces us to rethink the received view of privatization. His conclusions lead one to question a number of related issues, including the nature of communal tenure on public land in the Fayyum, the differences in taxation on private land under Ptolemaic and Roman rule, as well as the role of the redistributive state and temple economy in curbing some forms of agricultural intensification.

The economic impact of Roman rule has been judged in

two radically different ways. Rostovtzeff argued that Egypt was unique among the Roman provinces because it was set aside by Augustus for fiscal exploitation and never enjoyed the blooming economy and urban culture of the principate. He even suggested that the spread of the oppressive Egyptian fiscal and bureaucratic organization to the other provinces is what brought about the empire's later decline.⁴⁵ Few scholars would follow him this far, but Egypt's plight under Roman rule is still widely assumed: "For the Ptolemies, however harsh their rule, Egypt was their own kingdom where they lived; for the Romans it was simply a province to be exploited. It was, however, an exceptional province under the direct control of the emperor governing through an equestrian prefect."⁴⁶ The idea that greater distance between rulers and their subjects leads to larger tax intake is not very plausible. If distance plays any role, it could be the opposite one since it is historically more difficult for empires to govern faraway provinces.

The alternative view is that the Augustan reforms initiated more than two centuries of population expansion, urbanization, agricultural intensification, and economic growth.⁴⁷ The present book lends support to this general depiction of economic development in Roman Egypt. The Romans invested heavily in public infrastructure such as roads and harbors, and provided protection for the development of commercial trade routes, which linked the Nile to its oases and the Red Sea.⁴⁸ The lucrative trade in luxury goods with India and Arabia passed through Egypt, guarded by Roman garrisons, to reach the Roman empire. Strong property rights and low taxes on land stimulated reclamation and investment in the countryside as well as economic specialization in the nome capitals. What these trends meant for per capita productivity and living standards in the long run is less clear from the Egyptian evidence.⁴⁹

The economics of property rights

Neo-institutional economics has had some influence on the development of the arguments in this book. The greatest

contribution of this diverse branch of scholarship has been to bring economic history back into the social scientific mainstream by testing general hypotheses about the role of institutions in political and economic development.⁵⁰ Ancient economic historians are increasingly attentive to this literature because it has helped transcend the sterile debate between primitivism versus modernism while opening new interdisciplinary avenues of research with contemporary relevance.⁵¹ The institutional approach traces its roots back to nineteenth-century German historicism and to the early critiques of methodological individualism, which would ultimately come to define modern economics.⁵² What distinguishes the neo-institutional school from its antecedents, however, is precisely its application of rational choice theory to a wide array of social, political, and legal institutions in diverse historical and cultural settings.⁵³

Like any theoretical framework it is an artifact of its times. The methodology of rational choice drove out the historical and institutional schools in the early twentieth century, replacing social forms with individuals as the unit of economic analysis. Economic theory of the early and middle twentieth century, in the midst of two world wars and the Great Depression, was concerned with improving the efficiency of western industrial economies, which shared similar cultural and institutional features. The Cold War likely contributed to its expanding influence beyond economics to disciplines such as sociology, law, and politics in the English-speaking world.⁵⁴ Neo-institutionalism, on the other hand, seems to be a reflection of late twentieth century attempts to tackle challenges in the developing world, where western social and legal traditions cannot be taken for granted, and to devise institutional frameworks that go beyond laissez-faire capitalism and state socialism. It brings social forms, cultural beliefs, and legal systems into the analysis as variable factors that modify individual choices and affect economic performance.

Neo-institutionalism is as much a political and legal theory as it is an economic one. Land taxation and property rights, the agrarian institutions at the core of this study, are closely

linked to the state. The terms taxation and property are virtually unintelligible without the existence of the state. Collecting taxes in exchange for protection may be the defining characteristic of the state itself.⁵⁵ Similarly, some legal theorists insist that property rights in the strict sense are not possible without the state.⁵⁶ On the other hand, states do not necessarily monopolize these powers. They are themselves organizations that must coordinate (and compete with) other organizations such as cities, temples, associations, and social groups. Such groups may allocate individual rights to their constituent members that are akin to property and raise income that resembles taxes, which may conflict with the ruler's interests. The institutional structure created by this constellation of political interests is a major determinant of economic performance.

The Egyptian temples traditionally exercised administrative and fiscal powers over the land that belonged to them. The temple of Amun in the southern Egyptian city of Thebes even challenged the sovereignty of the Ptolemaic state by establishing a rebel theocratic regime.⁵⁷ The temple had a long history of political influence independence: from the fall of the New Kingdom around 1070 BCE until Egypt's reunification under the Saite dynasty (c. 685–525 BCE), it constituted the administrative center of one of the most powerful Egyptian states.⁵⁸ To increase royal revenue and to eliminate such resistance, the Ptolemaic administration increasingly subordinated temples more directly, especially from the late third century BCE onwards. Even on estates belonging to the temples, landholders had to pay part of their harvest to the state.⁵⁹

Claims of royal sovereignty over all land in Egypt in diplomatic and ideological contexts cannot be read as evidence for the lack of private property in Egypt. For individual landholders in Egypt such claims generally had fiscal rather than legal implications. The king's ability to tax land is not sufficient to regard him as its true owner.⁶⁰ Since at least the early twentieth century, however, scholars have maintained that the possession of land in the Ptolemaic period amounted at most to the status of hereditary lease

(German *Erbpacht*) because landholders paid “rent” (*phoros* or *ekphorion*) to the king.⁶¹ The confusion between rent and taxes in the sources is discussed in [Chapter 5](#). It suffices to note here that the payment of “rent” is no reliable indication of the landholders’ tenure rights in Ptolemaic Egypt, nor do changes in fiscal terminology in the Roman period coincide with fundamental legal reforms.

Hereditary lease was a feudal form of land tenure in Europe derived from late Roman law that was gradually abolished as peasants were emancipated and states modernized their legal systems with clearer property rights, for example, in Germany during the nineteenth century. At the turn of the century, the concept was appealing to German legal historians and to Rostovtzeff, given his familiarity with Russian serfdom, because there was still an ongoing debate about whether to abolish all forms of hereditary lease or whether to permit liberal variations, whereby tenants could buy, sell, and inherit land as virtual private property as long as they paid only a ground rent to its overlord.⁶² Even imprecise analogies can serve a heuristic purpose but the concept of hereditary lease has been stretched too far in the study of Ptolemaic Egypt. It is particularly misleading when the only evident constraint on the landholder's property rights was a fiscal obligation to the state or a temple. What one can possibly call hereditary lease in Greco-Roman Egypt is limited to the rarely attested situation in which the state or temple administration issued a leasehold that could be inherited but the land could not be sold and its heirs had to return it if they no longer wished to cultivate it; in some cases, the term may have been limited to ninety-nine years.⁶³

To understand property rights in Ptolemaic and Roman Egypt one has to sort out what legal rights one had over the land and what obligations one actually owed to the temple or the state. Hohfeld defines property as a bundle of rights, immunities, duties, and obligations.⁶⁴ According to this conception, property is embedded in social relationships, where there are typically overlapping claims to the same

goods. For example, a landholder may have rights to cultivate his fields but a shepherd may have rights to graze his animals on the stubble. The owner is the one with largest share of the bundle, that is, the one who is the main beneficiary of the property and accordingly the main one to suffer from any damage. There may be stronger or weaker degrees of ownership but property rights are seldom, if ever, absolute. Other people also enjoy or suffer the effects of others' property at least indirectly – economists call these effects externalities. Specifying each individual's property rights enables owners to acquire a fuller bundle, so that they bear the costs of their own misuse and so that others do not take advantage of their improvements.

Privatization is a cross-cultural strategy for coping with scarce resources. Property rights often fall on a continuum between the extreme cases of resources held in common and absolute unconditional ownership. Even in modern societies, other people often have a political or economic stake in how one uses one's own property, so states tend to place limits on individuals' rights by imposing legal obligations. In Greco-Roman Egypt, land was often subject to overlapping claims between states, temples, communities, and family members.⁶⁵ Narrower juristic conceptions of property sometimes blur these relationships. A continuum between communal rights, where benefits and damages are shared, and private rights, where these accrue solely to the owner, captures qualitative differences between more private and less private land in Egypt. Such differences are crucial for understanding the categorization and regional variation of land rights in Ptolemaic and Roman Egypt.

A similar approach to property informs the so-called law and economics movement in American legal studies, which attempts to explain the development of legal institutions as the response to economic demand as well as to analyze their economic effects.⁶⁶ The basic intuition is relevant across a number of different disciplines. Demsetz has proposed an economic model emphasizing the depletion of common resources under conditions of scarcity. An exogenous change

in market conditions or population growth, raising the demand for a commodity such as land, would cause people to invest more in establishing and protecting exclusive rights.⁶⁷ Similarly, Boserup has argued that population growth was a major stimulus to arable land intensification that led to the creation of more individualized private rights. Her ecological approach to agrarian institutions and technology has been widely influential in anthropology and development studies.⁶⁸ Polanyi labeled land, along with labor and money, as a fictional commodity that modern capitalism invented, but such commodities appear all the time, whenever states or communities are unable to manage resources collectively.⁶⁹ The Boserup-Demsetz model implies that increasing scarcity favors the development of individualized private rights. To evaluate this claim, it is helpful to have a flexible concept of property.

Any theory that postulates a relationship between economic forces and institutional reforms must address the problem of collective action. Olson distinguishes between public goods, from whose benefits no one can be excluded, and private goods, whose benefits are exclusive.⁷⁰ Most people demand public goods such as clean air and good roads, but since no one can be excluded, each person has an incentive to contribute less than the others, causing fewer public goods to be provided than is desirable. The same logic applies to the overuse of common resources. The so-called “tragedy of the commons” is the situation in which private gains outweigh the social costs, for example, when fishermen deplete the stock of fish because they have a private incentive to exploit the resource before others do even though their behavior collectively hurts everyone in the long run. Property rights are one way to prevent the free-rider problem by aligning private incentives with collective interests.

These issues are also relevant to a recent strand of research on environmental history, particularly what is known as the California School. Societies around the world have responded to scarcity and competition with what Pomeranz

calls a developmentalist project, which intensifies the use of local resources with the help of institutional, cultural, and social changes, including the creation of property rights.⁷¹ Managing water resources remained a major challenge for the Ptolemies, one that depended on the royal administration's varying ability to mobilize labor and monitor its own agents. Burke describes water management through Egyptian history as a largely state-driven developmentalist project, which he contrasts to the approach under British rule (1882–1952). The British, he argues, promoted private property rights to increase the cultivated area, which rewarded capital-rich landowners for their investment while putting pressure on peasants.⁷² Yet this oversimplifies the dichotomy between modern and pre-modern Egypt. There are general similarities to Roman Egypt, which he does not explore, in the legal and fiscal incentives that the administration provided for reclamation and improvement, which stand in opposition to the Ptolemies' relatively centralized approach.

Political and economic development

North's metaphor of institutions as “the rules of the game” captures the intuition that economic life has a structure, which constrains individuals' choices, while these individuals (the game's players) also act strategically within that structure.⁷³ However, the rules are not much use when they cannot be enforced and the players have incentives to cheat. The real substance of institutions lies in the expectations that they generate about what others will do in a given situation.⁷⁴ Formalizing institutions by codifying laws or publicizing information through rituals and socialization serves to bind individuals' own cognitive models of the world more tightly and to create a predicable framework conducive to mutually beneficial transactions.⁷⁵ When people repeatedly act contrary to others' expectations, they are constantly forced to revise their mental models of the world. This way of thinking about institutions is helpful for understanding the effects of political instability on economic behavior. The variable degree of stability under

the Ptolemies and after the Roman conquest affected the incentives for officials to abuse their positions, the security of producing or exchanging goods, and the ability of rulers to establish order by means of decrees and institutional reforms.

The effect of scarcity on the development of property rights presents an economic and ecological explanation for institutional change. However, this factor cannot be deterministic since reforms require some kind of social initiative that is contingent on other factors. Changes in relative prices simply alter the incentives for political entrepreneurs to undertake institutional change but do not automatically guarantee their success, which can depend on a political process of effective lobbying, coalition building, or even violence.⁷⁶ The simple economic logic of supply and demand for institutions that characterized early neo-institutional approaches has been revised in light of applications of collective action and game theory, which are better equipped to analyze strategic social and political interactions as well as cultural norms that influence expectations.⁷⁷ The Coase theorem in economic theory predicts that any initial specification of property rights will lead to an economically efficient allocation of resources.⁷⁸ In the real world, however, it is costly and difficult to specify rights and to determine their real value, especially in the absence of impartial legal institutions and competitive free markets. Thus inequalities in social or political power tend to shape allocation mechanisms for the private benefit of some and for the economic detriment of the society as a whole.⁷⁹

Governmental attempts to impose a formal property rights structure on informal social relations invites political bias and corruption. Political elites could use reforms in the name of economic efficiency to expand their own estates by manipulating the process at the expense of peasant communities.⁸⁰ Brenner has provided an influential empirical critique of neo-Malthusian and neo-institutional land-privatization models in economic history. He points out that similar demographic trends affected landholding

patterns in late medieval and early modern Europe differently depending on the ruling class's ability to remain united and thwart reform.⁸¹ The literature on agrarian change in post-colonial sub-Saharan Africa similarly suggests that differences in political power could distort the occurrence and outcome of privatization reforms.⁸² In sub-Saharan Africa, rapid population growth and rising land values may have been an underlying cause of privatization, but it was often the large estate owners who lobbied for secure property rights.⁸³ They stood to gain disproportionately from privatization schemes without compensating peasants for the loss of the intangible rights that are too costly to measure but that they enjoyed under communal arrangements.⁸⁴

Inequalities of power were as important as economic and ecological factors driving land privatization in modern Egypt. Baer documents the efforts of large landowners in nineteenth-century Egypt to take advantage of new agrarian laws to expand estates at the expense of peasant communities.⁸⁵ The evidence from Roman Egypt points in the same direction, as landowners sometimes colluded with village scribes to have public land registered under their own names, taking it from its occupants and then treating it as private property.⁸⁶ Other Roman institutional innovations in Egypt such as the public archives for property registration seem to respond to the demands of wealthy landowners, who benefited more and would be more likely to opt for the costly registration than small-holding peasants. Yet it is uncertain – despite the rhetoric of many land privatization lobbyists – whether institutions favoring larger landholdings are more economically efficient than those protecting smallholders.⁸⁷ There may have been some economies of scale that made the estates of absentee owners worked by private tenants or wage laborers in Roman Egypt more productive. On the other hand, large estates could also be an example of economic distortion that reflects social and political inequalities.

New perspectives informed by political science and sociology challenge overly optimistic accounts of

institutional change, according to which inefficiencies or environmental threats generate an automatic social response to correct them.⁸⁸ The recognition that power relations affect the specification of property rights and the overall institutional structure in which economies are embedded reveals common ground between Marxist economic historians and neo-institutionalists.⁸⁹ It simply cannot be taken for granted that societies or states make collective decisions rationally in the sense of maximizing overall economic productivity. They are composed of individuals and groups with potentially conflicting interests that require negotiation and lead to outcomes that are not mechanically directed by macroeconomic forces.

Rent-seeking is the term that economists and political scientists use to describe the behavior of individuals or groups when they use their political influence to gain resources or privileges from the state.⁹⁰ This is a case where individually rational behavior can lead to collectively irrational and socially harmful effects. In modern politics, lobbyists for special interest groups try to influence policies. Democratic politicians are constrained because their decisions are relatively transparent and must be at least partially consistent with the interests of a large enough segment of the population to ensure their reelection. Where transparency is lacking or where unelected politicians depend only on a military or oligarchic elite, rent-seeking can easily take the form of corruption as officials use their influence to divert revenue or obtain special privileges for powerful constituencies through the coercive power of the state.⁹¹ One empirical prediction of this theory is that the more wealth is redistributed by political means, the more people turn from profit-seeking behavior in the market to rent-seeking behavior in politics.⁹² The theory arguably helps to understand the shift from redistributive sources of economic power in Ptolemaic Egypt based on office-holding to sources in Roman Egypt based on agricultural intensification and trade as well as changes in administrative institutions.

Most work on the political economy of institutions has

focused on property rights, but taxation also deserves special consideration.⁹³ Fiscal policy may artificially affect the scarcity and value of land by offering incentives for its development. These are shaped by political factors that are not captured in the Boserup model of intensification. Classical political economists as well as neo-classical economists have devoted considerable attention to the effects of taxation on economic growth but not so much to the political or institutional determinants.

The stability of a regime is one important variable for determining fiscal institutions. Olson's theory of predatory rule depicts an anarchic world where roving bandits plunder an agricultural community, each time taking all that they can before rival bandits can take it.⁹⁴ The bandits accordingly deplete their common resources by making the communities unable to produce or by driving them away out of fear of being robbed. He contrasts this world with one in which a single bandit establishes a permanent territory. This bandit wants to maintain the community but taxes it at a rate determined by the probability of remaining in power to receive more revenue in the future.⁹⁵ Levi has devised a similar approach and applied it to economic history. She predicts that when rulers' hold on power is insecure, they discount the value of their future revenue and opt to maximize their immediate revenue instead. Her theory is illustrated with the case of tax farming in the Roman Republic, where the abusive behavior of the tax farmers has to be attributed at least partly to the effects of political instability on the senatorial elites who held magistracies and vied with one another for power.⁹⁶

Tilly develops a different framework to explain the origins of modern fiscal systems in Europe. He portrays medieval and early modern state formation as an evolutionary struggle driven by warfare. Some states opted for more coercive methods that drove away capital, while others became capital-intensive by granting protected status to cities and trade. Fearing confiscation undermines the incentive to engage in economically productive activity. If the ruler wishes to make the country more productive in

order to capture greater wealth over the long-term, there is no choice but to allow institutional partnerships that credibly prevent the state from confiscating wealth arbitrarily.⁹⁷ Ultimately, it was the modern tax state with its redistributive bureaucracy coupled with the protection of private property rights that could mobilize resources for war but still maintain economic growth that won out in this competitive environment.⁹⁸

The European experience tends to create the misleading impression that states were constantly revenue-maximizing. This requires several important caveats. First, the development of coercive, redistributive bureaucracies was not the only route to success in fragmented warring-states environments. The classical Greek city-states and republican Rome depended more on military conscription of citizens and allies than on direct taxation to finance war.⁹⁹ The Hellenistic kings, by contrast, were under constant internal pressure to maximize revenue for prestige and booty because of the political imperative to satisfy influential constituencies at court, in the military or civil administration, and attached to powerful temples, who expected redistributive benefits in exchange for supporting Macedonian rule.¹⁰⁰ In other words, the structure of the state matters in determining the trajectory of its institutional development, even within the same competitive environment. The confrontation between the Roman Republic and the Hellenistic kingdoms represents a good laboratory for comparing the performance of different political and fiscal regimes.

Second, even within the Hellenistic kingdoms, revenue maximization cannot be taken as a constant factor. If the high degree of political instability was the crucial variable distinguishing the Hellenistic states from the Roman principate, then we should expect variations in the level of instability within these kingdoms to be associated with similar fiscal and administrative policies. In the early Ptolemaic period, when Egypt experienced stable dynastic succession, an external empire, military superiority over its rivals, and relatively peaceful circumstances at home, there

was arguably less intrusive taxation and administrative coercion than one finds from the late third century BCE onwards. One can find similar effects of instability on the fiscal and administrative policies of the other Hellenistic states. Even in the late Roman Republic, social conflict and civil war were accompanied by more serious fiscal predation and corruption.¹⁰¹

Finally, a fragmented warring-states environment was more exceptional in world history than the European experience suggests. The Roman empire has to be studied not primarily in relation to later European states but in relation to other large imperial systems or “core-wide empires” that dominated their entire ecology and faced only weaker peripheral threats.¹⁰² After the fall of Rome, western Europe diverged from the trend, while East Asia, the Indian subcontinent, and the Near East experienced a sequence of empires that continued into recent history. They tended to create the fiscal and administration conditions – with lower taxes and less intrusive bureaucracies than warring states – that promoted the prosperity of imperial and provincial elites, especially large landowners, at the expense of the central state. The loss of stability in those empires, however, could have the opposite effects, so the process was not one-directional. Destabilized empires like Rome in the mid-third century CE or Song China in the twelfth century CE required a retrenchment of fiscal and administrative structures to face major new threats.¹⁰³ The transition from the Hellenistic period to the Roman principate illustrates qualitative changes in the environment, removing certain pressures and replacing them with others, which made imperial Rome less like modern European states.

Evidence and models

This book's aim is to understand the transition from Ptolemaic to Roman Egypt rather than to defend a particular theoretical position. It approaches the vast literature on institutions and political economy from the perspective of a historian who is concerned primarily with problems that

arise out of the historiography of Ptolemaic and Roman Egypt. To gain traction on these problems, however, insights from the social sciences have turned out to be extraordinarily helpful. Models represent how historical phenomena *should* logically fit together based on reasoning and comparison. Historians are often suspicious that proponents of such models tend to select and arrange the evidence to fit them. In cases of deficient evidence, models can indeed furnish a false sense of certainty if one fails to bear in mind their status as hypothetical constructs to help think through possible scenarios. Nevertheless, such skepticism often underestimates the ability of historical evidence and of papyrological data in particular to falsify mistaken hypotheses and to lend empirical support to theories whose implications extend beyond the study of Greco-Roman Egypt.

The major obstacle for this study is the relative shortage of evidence from the transitional period from 100 BCE to 100 CE.¹⁰⁴ The end of the Ptolemaic period is known primarily from historical and literary accounts of Greek and Roman authors as well as a number of inscriptions. There is a wealth of papyrus documents surviving from the third and second centuries BCE but afterwards the number declines significantly. Some exceptions are the Greek documents from the Herakleopolite nome, most of which concern military settlers, and the documents from Busiris, where a number of official texts from Alexandria had been sent and were used there for making mummy cartonnage.¹⁰⁵ The first century of Roman rule is likewise the least known from documentary sources. Again there are literary texts and inscriptions but the bulk of the papyri come from the second and third centuries CE. Nevertheless, compared to many parts of the ancient world there is still an abundance of information for the whole period. Tax receipts, for example, written on potsherds or ostraka survive in great quantities from the late first century BCE and early first century CE in southern Egypt.¹⁰⁶

Instead of concentrating on the fragmentary source

material from the transitional period itself, this study adopts a more structural, comparative approach. If one adopts a wider chronological scope, then there are rich sources of evidence that make the transition from Ptolemaic to Roman Egypt an excellent case study. It is possible to develop a general outline of the institutional structure based on the earlier and later material and then to use the evidence that is available from the transitional period to qualify these depictions with changes over time and to explore the factors causing them. Even though data about agriculture and land tenure dominate the papyrological record, the only scholarly surveys that exist are outdated and provide no quantitative evaluation.¹⁰⁷ Historians specialized in the use of papyrological evidence tend to address problems of land tenure and taxation in connection with one text or group of texts from one area and time. Such caution is warranted by the uneven survival of the papyri and the problem of extrapolating from unique cases. However, any attempt to explain the regional and historical differences in agrarian institutions must struggle with these limitations and draw on the data available knowing that additional evidence might falsify the arguments.

The main quantitative data used for this study pertain to population, land tenure, and taxation. They had to be collected from the editions of land surveys, granary accounts, tax lists, and private documents. There are well-known biases that must be taken into account. Most important is the almost total absence of such data from the Delta. The Fayyum region, by contrast, is overrepresented with papyri. Rather than extrapolating from these sources, the Fayyum is treated here as a distinct region for comparison with the Nile Valley. Within the Nile Valley, what frustrates comparison is that the Ptolemaic evidence comes mostly from the southern part (the Thebaid) while the Roman evidence is mainly from the middle Nile Valley. Nevertheless, the consistency of their patterns in contrast to the Fayyum seems to justify treating the Nile Valley as one region.

Recent work on the Ptolemaic and Roman tax and census

registers provides valuable demographic data, particularly for the Fayyum region.¹⁰⁸ Otherwise, nineteenth-century evidence from Egypt must supplement it for estimating roughly the population size and the limits of agricultural production.¹⁰⁹ Price data in the papyri are also more abundant from Egypt than other parts of the ancient world. They are still notoriously difficult to use, especially for land and land rents, due to regional biases and the impossibility of controlling for the quality.¹¹⁰ There are few existing studies of taxation for either the Ptolemaic or the Roman period, most of which are out-dated or void of economic analysis.¹¹¹ The work of collecting data on individual taxation rates for land in the Ptolemaic period from ostraka and papyri remains to be undertaken comprehensively but it was possible to gather a general range based on recent publications.¹¹²

This book attempts to put this evidence to use by evaluating a set of interwoven models that combine to form a larger argument about the transition from Ptolemaic to Roman rule. The central question is to what extent economic institutions in Ptolemaic and Roman Egypt were shaped by the different political regimes. To answer the question, one cannot limit oneself to an analysis of explicit political reforms but must also consider alternative mechanisms of institutional change in order to evaluate their relative significance. The method adopted is to establish relationships between various factors, particularly geography, population, land tenure, legal protection, taxation, administration, social status, and political instability. The structural transition in the agrarian economy cannot be reduced to a mono-causal explanation. It was due to an interplay of forces, ranging from the impersonal environmental constraints to the agency of landholders and officials and even to the political calculations of rulers.

This and the following chapter constitute [Part I](#), which serves as an introduction to the whole book. [Chapter 2](#) lays some of the groundwork for this approach by looking at the geography and population of Egypt. It attempts to estimate regional differences in population density and to link them

to variations in soil fertility, irrigation, immigration, and the disease environment. It serves as an overview of long-term environmental and demographic patterns. Regional and temporal differences are potentially important for explaining the institutional structure in Ptolemaic and Roman Egypt. The Boserup-Demsetz model described above puts emphasis on the relationship between population density relative to agricultural land and the development of property rights. Testing the hypothesis that land scarcity leads to the privatization and the formalization of land rights must overcome a number of empirical challenges. The ratio of population to available land serves as the most convenient index of land scarcity.

[Part II](#) is devoted to the topic of land rights in Ptolemaic and Roman Egypt. [Chapter 3](#) analyzes the classifications used in land surveys and tax registers to determine whether there were any regional variations in land tenure corresponding to the results of [Chapter 2](#). This is not sufficient to prove that land scarcity was the ultimate cause for the existence and official recognition of private land rights but it does introduce an alternative to the traditional view that the Roman regime introduced private property. The chapter also provides a good opportunity to introduce the various categories of landholding and changes in terminology from Ptolemaic to Roman Egypt. Many of these changes reflect substantive differences in Ptolemaic and Roman land taxation that receive more explicit analysis later in the book.

[Chapter 4](#) evaluates traditional social and legal institutions for alienating and inheriting property in ancient Egypt. It contrasts the legal institutions underpinning private landownership in Egypt with the customary tenure arrangements on royal and temple estates. Here regional differences are again pronounced as private land seems to prevail in the Nile Valley, while communal village institutions are well attested in the Fayyum. A model of customary tenure, familiar from other peasant societies, provides the best explanation for their function and for their

gradual disappearance due to the encroachment of landowners and the privatization of public land in Roman Egypt. Overall the continuities between the Ptolemaic and Roman period outweigh the differences in the realm of land tenure and lend support to the conclusion that the land-tenure regime was embedded in deeper ecological factors and was relatively impervious to political regime change. Thus the model relating land scarcity to private land rights can be linked to the main argument.

The book turns in [Part III](#) to fiscal and administrative reforms from Ptolemaic to Roman Egypt. [Chapter 5](#) adds taxation as another layer of analysis on top of geography and land tenure. Regional patterns in land taxation were weaker than sometimes thought. The imposition of a somewhat uniform fiscal regime suggests that taxation was more closely linked to political change than was the case with land tenure. An overview of the Ptolemaic taxes on land based on the land registers and tax receipts necessitates some modifications to the existing scholarship. Fiscal reforms in early Roman Egypt arguably played a decisive role in the formation of private estates and the investment in agricultural production in Roman Egypt. The main difference was between a variable harvest-tax regime in the Ptolemaic period by which the royal and temple administration extracted much of the agricultural surplus and a fixed-tax regime in the Roman period. Comparisons with the different land taxation systems in early modern England and France as well as Tokugawa Japan illustrate the potential economic effects proposed in this model of fiscal reform.

[Chapter 6](#) explores what effects the shift in taxation, which made agricultural land a more profitable investment, had on the value of holding offices in Egyptian temples and the state administration. It suggests that changes in economic behavior may have exerted bottom-up pressures transforming the state bureaucracy and the role of the temples in society. This would be surprising because one usually thinks of administrative reform as an example of unmitigated political influence. There were indeed specific

Roman policies aimed at undermining the temples' power and at adapting the royal bureaucracy to the needs of the Roman provincial administration. However, some of the changes must be seen as responses to pressures from below. This argument draws its inspiration from Bingen's provocative model of structural tensions in Ptolemaic society, which with some modification can shed light on the causes of administrative change in Roman Egypt.¹¹³

Part IV brings together the various threads of the argument to assess the impact of political regimes on economic institutions. **Chapter 7** focuses on the top-down pressures that rulers exerted on Egyptian society. The starting point is the model of predatory rule, which suggests that in unstable regimes rulers maximize short-term revenue despite the harm it causes economic production. The Roman conquest fundamentally altered the political structure in Egypt, transforming it from a Hellenistic kingdom into a province ruled by a distant but powerful emperor. The conclusion, **Chapter 8**, reviews the evidence for economic development and articulates a new approach to the problem of continuity versus discontinuity from Ptolemaic to Roman Egypt.

It is hoped that this organization of the chapters will make it easy enough to follow an interlocking set of arguments. The ratio of fertile land to population in Egypt had a powerful influence on the economic value of land and hence on the demand for exclusive property rights. Geography and demography turn out to be crucial factors qualifying the common assertion that Rome instituted a program of land privatization. Yet despite the continuities in land tenure, political change did interact in more indirect ways with patterns of land ownership and tenancy. Herein lies the connection between Roman fiscal reform and the transformation of the agrarian economy. Making Egypt into a Roman province altered the political structure and enabled the administration to abolish harvest taxes. Lowering taxes raised the value of landownership relative to the redistributive benefits of royal and temple office-holding. It created stronger incentives for reclamation, productive

investment, and securing property rights.

- ¹ Haensch (2008: 82–3).
- ² Christensen (2002); Monson (2007a).
- ³ Vadorpe (2000b: 172–4; 2006: 167).
- ⁴ For example, P. Lond. III 604 (47 CE; Krokodilopolis, Panopolite?), discussed in Chapter 3, pp. 96–9.
- ⁵ De Vries (1974: 236–9); Overton (1996: 7–9, 203–7).
- ⁶ Van Minnen (1986; 1987); Bagnall (2005: 194–5, 198–9).
- ⁷ See Chapter 5.
- ⁸ Liturgies: see Chapter 6, pp. 236–45; town councils: Bowman (1971); Tacoma (2006).
- ⁹ See Chapter 4, pp. 122–31.
- ¹⁰ Polanyi (2001 [1944]: 45–58).
- ¹¹ Ober (2006: 134–6) with reference to Giddens (1990), whom he criticizes (at 135 n. 12) for his binary view of modern and pre-modern history with medieval Europe as the model of pre-modernity.
- ¹² Tomsin (1964); Lewis (1970a: 8–9).
- ¹³ Lewis (1970a); the quotation is from the title of Lewis (1984).
- ¹⁴ Lewis (1970a); Rathbone (1989); Bowman and Rathbone (1992); Thomas (2001).
- ¹⁵ Lewis (1984: 1079–80).
- ¹⁶ Lewis (1970a: 9–11; 1993a: 276–7, 281).
- ¹⁷ Haensch (2008); cf. Huzar (1988); Eich (2007: 398–9); Habermann (2007: 348).
- ¹⁸ Haensch (2008: 101).
- ¹⁹ Jördens (1999: 145–8, 164–9); Hagedorn (2007: 195); Haensch (2008: 86–7).
- ²⁰ Manning (2003: 237); Bingen (2007 [1975]: 120–1).
- ²¹ Wolff (2002: 111–13).
- ²² Haensch (2008: 99–101).
- ²³ Haensch (2008: 82–3).
- ²⁴ Capponi (2005) with Jördens (2006).
- ²⁵ Bingen (2007 [1978a]: 163; 2007 [1978b]: 211); Samuel (1989: 51–65).
- ²⁶ Turner (1984: 148, 154–5); Rupprecht (1994: 236).
- ²⁷ Priesthood: Thompson (1988); Quaegebeur (1979); Clarysse (2000); Lloyd (2002). Double identity: Clarysse

- (1991); Quaegebeur (1992); Vandorpe (2002). Land rights: Clarysse (1979a); Manning (2003).
- 28 Rostovtzeff (1902; 1910; 1920; 1929; 1957 [1926]), followed by Wilcken (1912: 285).
- 29 Cf. Rostovtzeff (1941: 289–90).
- 30 For discussion of this post-Rostovtzeff scholarship, see Rowlandson (2003) and Manning (2005).
- 31 Rowlandson (1996: 63–9).
- 32 Parassoglou (1978); Crawford (1976: 40–44; 1980) points out that it is unlikely that highly placed members of the Roman elite had access to Egyptian land markets and more likely received their estates as gifts; cf. Thompson (1987: 558–60).
- 33 See Monson (2005) and Chapter 4, pp. 136–41.
- 34 Jördens (2009: 1–58); cf. Jördens (2006: 167) *contra* Capponi (2005: 120–1).
- 35 Jördens (2009: 41–53, 338–43, 352–4).
- 36 Jördens (2009: 259–62, 518–19, 521–3).
- 37 Jördens (2009: 95–111, esp. 102, 108, 110–11).
- 38 Déléage (1934: 111–12); Brunt (1975: 137); Bonneau (1979: 62); for criticism, see Chapter 5, pp. 184–91.
- 39 Tomsin (1964); Lewis (1970a: 8–9); Rathbone (1993: 110–1); Bowman and Rathbone (1992: 111–12).
- 40 Lewis (1970a: 8).
- 41 Bowman and Rathbone (1992: 109–110, 112); they insist on an “important difference” (109 n. 11) between *idioktetos gē* and *idiotikē gē*, but these terms were used interchangeably in the Roman period; see Chapter 3, pp. 78–9.
- 42 Manning (1995; 1999b; 2003).
- 43 Van der Spek (1995); Hudson and Levine (1996; 1999).
- 44 Manning (2003: 237).
- 45 Rostovtzeff (1920; 1929).
- 46 Thompson (1988: 266); similarly, Rostovtzeff (1929: 342–3).
- 47 Rathbone (2007b: 705–18); Jördens (2009: 511–14).
- 48 Jördens (2009: 414–29, 518–19); Bagnall (2005: 196–7); Adams (2007: 220–39, 252–3).
- 49 Frier (2001).
- 50 North and Thomas (1973); North (1981); North et al.

(2009).

- 51 Bresson (2007: 23–36) provides a useful overview; for some uses of neo-institutional theories in ancient history, cf. Morris (2004), Kehoe (2007), and Ober (2008).
- 52 Hodgson (1998); Gottschalk and Broyer (2004).
- 53 Dugger (1990); Basu et al. (1987); Gottschalk and Broyer (2004: 56–61).
- 54 Amadae (2003: 83–190).
- 55 Schumpeter (1991 [1918]: 110): “fiscal demands are the first sign of life of the modern state. This is why ‘tax’ has so much to do with ‘state’ that the expression ‘tax state’ might almost be considered a pleonasm.”
- 56 Barzel (1997: 3).
- 57 Veisse (2004a: 11–26, 84–99).
- 58 O’Connor (1983: 232–49).
- 59 Thompson (1988: 106–54); Huss (1992); Clarysse (2000); Pfeiffer (2004: 117–19); Manning (2006: 263–4); Fischer-Bovet (2008).
- 60 Hermann (1955: 98): “The circumstance alone that the possessor of *gê idioktetos* [private land] was obliged to pay taxes to the crown is not enough in my view to be able to speak of the king as the real owner of the land. In this regard one would otherwise have to recognize all tax-liable things as state property.” Similarly, Weber (1988 [1909]: 251) and Seidl (1962: 111).
- 61 Rostovtzeff (1910: 21–8); Wilcken (1912: 285–6) with his comments on W. Chr. 340 and UPZ II, pp. 270–1; Préaux (1939: 166, 185, 496); Taubenschlag (1955: 266–9); most recently, Vantorpe (2000b: 194) and Maresch (2009: 124–9).
- 62 See Brentano (1897) for the then ongoing reform debate in Prussia; for the late Roman law of hereditary lease and its alleged derivation from Hellenistic precursors, see Jörs et al. (1987: 192–3) and Mayer-Maly (1999: 102–3); van der Spek (1995: 183–92) compares medieval Dutch laws of hereditary lease and disputes the term’s applicability to land tenure in Hellenistic Babylonia.
- 63 In P. Tebt. II 309 (116/117 CE; Tebtunis, Arsinoite), a priest returns land to the temple that he had inherited from his father; P. Harris I 138 (92 CE; Oxyrhynchus),

col. 1, lines 19–25, records a woman transferring (*ekstasthai*) to her grandson temple land on hereditary lease (*memisthomenê eis ta patrika*), on which see Shelton (1989); in the tax register P. Petaus 44 (185 CE; Arsinoite), lines 13–15, land leased hereditarily (*eis ta patrika*) is listed as a type of temple land; the same phrase is used in P. Bingen 59 (33 CE; Tebtunis, Arsinoite), line 12, to describe a 93-year hereditary (*eis ta patrika*) lease of public land (*demosia edaphê*); in P. Oxy. XLII 3047 (245 CE: Oxyrhynchus), col. 32, line 39, a landowner with an extensive private estate also had two arouras of land leased hereditarily (*eis ta patria*). Cultivators who leased hereditarily (*eis to patrikon*) also appear in the Ptolemaic royal decrees of 186 (restored) and of 118 BCE as a subcategory of all landholders paying “grain rent” (*sitikê misthosis*) to the king, where it appears to be distinct from the category of private land (*idioktetos gê*); P. Köln VII 313 A = C. Ord. Ptol. 34 (186 BCE), line 17 [restored]; P. Tebt. I 5 = C. Ord. Ptol. 53 (118 BCE), line 12, cf. line 111 for *idioktetos gê*; for a 99-year lease of temple land, cf. P. Receuil 10 (119 BCE; Diospolite).

- 64 Hohfeld (1964 [1920]); this theory of property is taught in standard American law school textbooks, for example, Stoebe and Whitman (2000: 1–7); for the contrast with property in European (particularly German) civil law, cf. Stephanias (2005) and Körsen (2005).
- 65 Manning (1995; 2003: 193–7).
- 66 Coase (1990 [1960]); Posner (2003 [1973]); Mercurio and Medema (2006); cf. Kehoe (2007: 23–52).
- 67 Demsetz (1967; 1998; 2002); Anderson and Hill (1975); Merrill (2002).
- 68 Boserup (1965); Spooner (1972); O’Connor (1972); Platteau (1996; 2003); cf. Roselaar (2009) on the privatization of public land (*ager publicus*) in Roman Italy.
- 69 Polanyi (2001 [1944]: 76–80); Kolstad (2000: 99–116), for example, examines the economic arguments for creating a market in carbon emissions (surely a “fictional commodity”) in response to pressures from environmental pollution.

- ⁷⁰ Olson (1965).
- ⁷¹ Pomeranz (2009: 7–14); cf. Richards (2009) for an overview of the development of property rights in world history in response to pressure on natural resources.
- ⁷² Burke (2009: 83–6, 102).
- ⁷³ North (1990: 4).
- ⁷⁴ Greif (2006: 14–23, 29–53, 124–52, 158–70); cf. Aoki (2001) and North (2005) for similar approaches.
- ⁷⁵ Cf. Chwe (2001) with Ober (2008: 194–9) for “rational rituals” that align expectations, facilitating cooperation and transactions.
- ⁷⁶ Ruttan and Hayami (1984); cf. Bates (2005 [1989]).
- ⁷⁷ For an excellent overview, see Rose (1998); cf. Greif (2006: 158–84).
- ⁷⁸ Coase (1990: 157–85, 174–9) recognized that his theorem unrealistically assumes that there are no transaction costs, which include the costs of specifying rights and determining their value.
- ⁷⁹ Swedberg (2003: 214–17); Mercurio and Medema (2006: 107–19).
- ⁸⁰ Banner (2002) provides a thorough theoretical explanation of this problem.
- ⁸¹ Brenner (1976); Aston and Philpin (1985) reprint Brenner's essays with his critics' responses.
- ⁸² Platteau (1996) is a thorough review of research on land rights in sub-Saharan Africa.
- ⁸³ Bates (2005 [1989]) provides a case study of Kenya, showing how landowners and peasants responded to increasing land scarcity in the political arena; see Firmin-Sellers (1996: 7–14) for the Gold Coast.
- ⁸⁴ Cf. Platteau (1996: 42).
- ⁸⁵ G. Baer (1962: 1–12).
- ⁸⁶ Rowlandson (2006); Monson (2008).
- ⁸⁷ Netting (1993: 320–34) emphasizes the effectiveness of smallholding in agriculture relative to large estates assuming that there are no economies of scale; Johnson (1972) also suggests that agency costs make landlord-tenant tenure relationships less efficient than owner-cultivation tenure systems.
- ⁸⁸ Levmore (2002) provides a survey of the two approaches;

- North (1981: 20–32); Libecap (1986); Eggertsson (1990: 249–77); cf. Granovetter (2005: 84–5) with reference to models for antiquity.
- ⁸⁹ Levi (1981); Bardhan (1989: 8–11); Marx (1973 [1941]: 486) himself admitted that population growth rather than technological change undermined communal institutions in pre-capitalist societies; cf. Elster (1985: 248–53).
- ⁹⁰ Krueger (1974); Buchanan (1980); Tullock (1980).
- ⁹¹ Lambsdorff (2002: 104–21; 2007: 109–35).
- ⁹² Buchanan and Tullock (2004 [1962]: 269–80).
- ⁹³ Campbell (1993) and Swedberg (2003: 173–82) review the literature on fiscal sociology.
- ⁹⁴ Olson (1993; 2000).
- ⁹⁵ Olson (1993).
- ⁹⁶ Levi (1981; 1988: 71–94); Monson (2007e); cf. Kiser and Kane (2007).
- ⁹⁷ Greif et al. (1994).
- ⁹⁸ Tilly (1992: 31–2, 66–95).
- ⁹⁹ Morris (2005: 6–11); cf. Eich and Eich (2005), who suggest “in view of its rudimentary administration, Rome got the *maximum it could* get under the circumstances” (28), but this begs the question, why did Rome not develop its administrative apparatus for this purpose if revenue maximization was its aim?
- ¹⁰⁰ Austin (1986: 459, 461–5).
- ¹⁰¹ Monson (2007e; forthcoming b).
- ¹⁰² Chase-Dunn and Hall (1997: 209–10); Scheidel (2009: 6); Noreña (2010: 532–3).
- ¹⁰³ See the contributions in Monson and Scheidel (forthcoming).
- ¹⁰⁴ Habermann (1998); Haensch (2008: 82–3).
- ¹⁰⁵ Salmenkivi (2002: 25–6, 33–6).
- ¹⁰⁶ Cf. Hoffmann (2000: 26) for the distribution of Demotic papyri and ostraka.
- ¹⁰⁷ Rostovtzeff (1910); Schnebel (1925).
- ¹⁰⁸ Clarysse and Thompson (2006), Bagnall and Frier (1994), Scheidel (2001).
- ¹⁰⁹ Egypt (1911); Scheidel (2001).
- ¹¹⁰ Cadell (1994); Drexhage (1991).

- ¹¹¹ Wilcken (1899); Wallace (1938); Préaux (1939).
- ¹¹² Kaplony-Heckel and Kramer (1985); Kaplony-Heckel (1993; 1994; 1999; 2001); Vandorpe (2000b); Christensen (2002).
- ¹¹³ Bingen (2007 [1989]).

Chapter 2 Geography and population

Introduction

The traditional geographical division of Egypt appropriately reflects the flow of the Nile. Upper Egypt is in the south, stretching from the first cataract near modern Aswan downriver to the Delta in the north. Lower Egypt is the Delta, where the Nile breaks off into three branches, which fan out and subdivide across the flood plain. Although the Delta probably contained about one half of Egypt's total population through most of its history, it occupied much more than half of the watered land, measuring perhaps 16,000 km², compared to 11,300 km² in the rest of the Nile Valley in the Greco-Roman period.¹ Some scholars further distinguish between Upper and Middle Egypt. Upper Egypt in this more limited sense is the narrow stretch of the Nile winding between Abydos and Aswan. Known as the Thebaid in antiquity, this fertile and densely populated region was the core of many powerful pharaonic Egyptian dynasties. In Middle Egypt, between the Delta and the Thebaid, the flood plain is wider, being watered both by the Nile itself and by a branch called the Bahr Yusef, which runs parallel along its western side until it flows off into the Fayyum depression.

Though nominally part of Middle Egypt, the Fayyum constitutes its own geographical entity with its unique ecology. The water of the Bahr Yusef created here in antiquity a semi-oasis full of marshes and lakes where papyrus was harvested and where the pharaohs once hunted wild game. By controlling the flow of water at the Lahun gap where the Bahr Yusef enters, the Middle Kingdom pharaohs and later, more ambitiously, the Ptolemies were able to reclaim land for arable agriculture. The largest water body, Lake Moeris, shrank dramatically and became increasingly saline in the Greco-Roman period, while a

second lake in the Gharaq basin probably dried up completely after the Ptolemaic reclamation. With an area of roughly 1,350 km², the Fayyum constituted one of the largest of about forty or fifty administrative districts. For these districts historians use the term *nomes* (singular, *nome*) derived from Greek. In the Ptolemaic and Roman period it was called the Arsinoite nome after the Ptolemaic queen, Arsinoe, wife and sister of Ptolemy II.

In order to understand the institutional structure of the land-tenure regime in Egypt, one must begin with its geography and population. This chapter sets out the ecological context in which property rights evolved. The starting point is Boserup's influential theory of how demography drives the process of agricultural intensification.² Her thesis modifies the Malthusian notion that population growth in pre-industrial societies is immediately reined in by resource constraints. Demographic expansion provides the stimulus for institutional and technological innovations that enhance productivity and make long-term population growth sustainable despite short-term fluctuations. As Stone notes, critics of Boserup usually dwell on the obvious fact that the model cannot explain everything. It is a *ceteris paribus* model, or what he calls a "square-chicken model," which is "patently oversimplified, as are all general models including demographic transition, biological evolution, the psyche, the economy, planetary motion, and the atom."³ Nevertheless, the model has spawned a large "beyond Boserup" literature that addresses many of the shortcomings of the initial treatise and develops a more robust theory with empirical foundations that is still rooted within Boserup's basic framework.⁴

The Boserup model is primarily about scarcity as a stimulus to more intensive agricultural methods and technological innovation. She also signals the importance of institutional innovation in the property rights regime, an aspect of the theory that has been developed further by economists. The law and economics literature outlined in the introduction stresses the importance of property rights to avoid socially destructive uses of common resources. The

work of Boserup and Demsetz has coalesced into a theory of land rights that constitutes an important framework for the study of agricultural development in pre-industrial societies.⁵ The simple economic logic of supply and demand for institutions has been vastly revised in light of applications of collective action and game theory, which is better equipped to analyze strategic social interactions and even cultural norms that influence expectations. Just as is the case with Boserup's theory of intensification, there is a substantial literature that can be characterized as “beyond Demsetz” that develops a more robust theory of property rights.⁶

In order to test the hypotheses of the Boserup model, both the scarcity of land and the level of privatization have to be defined in a way that makes them observable in the historical record. While [Chapter 4](#) tries to define in more qualitative terms the differences between private and communal land rights, this chapter is concerned with measuring scarcity. Scarcity is a relative term rather than an absolute term, and it is used here as a synonym of value. The underlying assumption is that the more people there are who want something or the more *strongly* they want it, the scarcer it becomes.

There is no single variable that determines the scarcity of agricultural land. In some cases it might be caused by lower taxes or by higher prices for agricultural goods, which make more people want to invest. Economic integration that increases the amount of investment might similarly drive up the value. These economic factors had a major impact on rising land values in nineteenth century Egypt, causing pressure for de facto privatization and ultimately land reform.⁷ One might hypothesize that similar processes of economic change led to gradual privatization in the transition from Ptolemaic to Roman Egypt. However, it is difficult to compare the integration of Egypt into the world capitalist economy of the nineteenth century with its integration into the Roman empire. Ancient landowners' dependence on markets and macroeconomic forces was probably weaker, though they cannot be discounted

altogether.

One would expect that population density had a stronger effect on land scarcity in Greco-Roman Egypt. However, the main reason for using population density as a proxy for land scarcity is that it is possible, though by no means easy, to observe this factor at least indirectly, whereas macroeconomic variables are conjectural. The real value of land cannot be ascertained simply by looking at prices and rents. First, there are too few surviving land sales from the Ptolemaic and Roman periods that mention the price, and when they do it is impossible to control for the land's quality. Second, focusing on the market price as a proxy for land value limits one only to land that is already private. There are no sales, and hence no prices, for communal land but it obviously had a value to the villages and peasants who used it. Third, the level of privatization or, more specifically, the fullness of the bundle of rights being conveyed increases the value of land for potential buyers, so prices alone cannot explain how the level of privatization changed over time.

This last reason also reminds us that population density is not completely independent of the level of privatization. The main determinant of population density in Ptolemaic and Roman Egypt was most likely agricultural productivity, just as it seemed to officials in Egypt during the early twentieth century.⁸ If private property rights enhanced productivity by providing incentives for intensification without overuse, the causality could be reversed and population density could not explain privatization.⁹ To overcome this analytical problem, this chapter aims to demonstrate that population density was shaped more strongly by factors other than property rights. It maintains that the regional differences were determined largely by Egypt's geography, which made land in the Nile Valley and southern Delta more productive than land in the Fayyum and the northern Delta. Higher productivity and higher population density, it is hypothesized, would raise the value of land and create stronger incentives for landholders to obtain exclusive rights.

Estimating population density

There are major obstacles that stand in the way of identifying the population density and its regional variations in Ptolemaic and Roman Egypt. Three putatively relevant sources of information about the population and land area are available: testimonies of ancient authors, figures adduced from ancient land and tax registers for particular villages or nomes, and comparisons with more recent Egyptian history. The literary accounts are not only contradictory but also so rhetorically stylized as to lend them virtually no credibility.¹⁰ The figures for density based on non-literary texts come almost entirely from the Fayyum, which was not typical of the rest of Egypt. Nineteenth- and early twentieth-century comparisons rest on the assumption that the population ecology of the Nile remained more or less constant. The approach adopted in this chapter is to use such comparisons cautiously as an independent control for interpreting the patchy data from ancient land and tax registers.

Two independent methods of comparison between ancient and modern data are developed in the following sections. Because the results of both methods point to the same conclusion, they tend to enhance one another's reliability. The first method uses the comprehensive modern data for population and land use by region that are available for the years 1895–1910. Because by that time the population had broken past plausible levels in antiquity, these data can say nothing useful about the *actual* densities in Ptolemaic and Roman Egypt. They can only provide an impression of the *relative* densities between regions, which may – for reasons argued in this chapter – have remained fairly consistent since antiquity. The relative densities can then be used to evaluate the ancient data for specific regions. The second method compares the total population size and area of cultivation in the early nineteenth century with the ancient evidence. This provides a useful benchmark for the *actual* population size and cultivation area in antiquity, though circumstances at that time make higher figures plausible for

antiquity, especially in the Roman period.

When one compares the ancient data, both methods indicate that the Fayyum and the Delta had a low population density compared to the Nile Valley during the Ptolemaic and Roman periods. The next two sections first present the ancient evidence and then apply the two methods of comparison to the modern data. Subsequent sections examine the underlying causes of regional variation in Egypt's population density as well as possible counterevidence and other methodological objections to the conclusions of this chapter.

The ancient evidence

Following the terminology of modern land surveyors of Egypt, we should distinguish between cultivable land and the area that was actually being cultivated. The *cultivable* area comprised land that was deemed theoretically suitable for cultivation even though some was uncultivated in any given year due to variations in the flood and soil conditions or to insufficient labor to work it. The *cultivated* area was the area of land that was being used for arable farming in a particular year. It thus excludes unused land and fallow land used only for pasture. The uncultivated arable land, which may be termed marginal land, is the difference between the cultivable and cultivated area. Earlier studies of population density in Greco-Roman Egypt are not always explicit about which area is being used.

The taxation registers from the early Ptolemaic Fayyum present evidence for population levels. One register in particular from the mid-third century BCE reports 59,000 adult males and females in the entire Arsinoite nome, which is the name for the administrative unit corresponding to the Fayyum. Adding some uncounted people and applying a standard multiplier of people per adult male reveals a total population of 85,000–95,000 inhabitants.¹¹ This still may be an undercount because it was used to assess the salt tax and officials would have found it difficult to keep the lists accurate. The cultivable area had risen dramatically in the

early third century BCE just before these registers were compiled. The Ptolemaic reclamation project tripled the amount of arable land by lowering the level of Lake Moeris. From a pre-Ptolemaic area of about 450 km², most estimates for the Ptolemaic and Roman period range from 1,200 to 1,500 km² based on the size of the lake and on modern comparisons.¹² This implies a population density of only 67 people/km² around 250 BCE.¹³ In 1895–1910 the mean cultivable area was 1,423 km² of which only 1,173 km² was actually cultivated each year. If one likewise assumes 80% cultivation rate in antiquity, then the density would be 82 people/km² on cultivated land. In light of the comparative evidence discussed below, such densities for the Arsinoite nome are remarkably low.¹⁴

It is likely that the Fayyum was only gradually settled after its initial reclamation in the early third century BCE.¹⁵ More than one century later, around 115 BCE, the village of Kerkeosiris in the southern Fayyum had an estimated 91 people/km² on cultivable land or 178 on cultivated land. Population growth in the Fayyum is also consistent with ostensible changes in land use from the early to late Ptolemaic period.¹⁶ On the other hand, Kerkeosiris may have been atypical because it reports on years just after the civil war between Ptolemy VIII and Cleopatra II when only slightly more than half of the cultivable land in the village was under cultivation annually and the amount tended to decrease between 121 and 111 BCE.¹⁷ By contrast, one source suggests that about 95% of the cultivable land was annually under cultivation in Theadelphia during the Roman period, excluding imperial estates.¹⁸ Just how underpopulated the Fayyum was in the 250s BCE is evident from the size of its capital. According to the taxation registers, there were only 4,000 inhabitants in the regional capital Krokodilopolis, which sharply contrasts with its estimated 28,000 – or even 44,000 – inhabitants during the Roman period.¹⁹

Despite the growth of the Fayyum in the Ptolemaic period, it probably never reached parity with the population density of the nomes in the Nile Valley. The figure of 28,000

inhabitants for the nome capital in the Roman period is similar to the size of other nome capitals in the Nile Valley in that period. However, the Arsinoite nome was geographically one of the largest nomes in Egypt, so its capital city was proportionally much smaller than other nome capitals.²⁰ In addition to late Ptolemaic Kerkeosiris, data for population density are available for three villages in the Roman Fayyum based on taxation registers that give the total number of adult males and land surveys that give village areas. These data are found in [Table 2.1](#). Though denser than the early Ptolemaic taxation registers would suggest, the comparative evidence to be discussed shows that these villages still had a low density relative to the Nile Valley.

Table 2.1 *Ancient Fayyum land and population estimates*¹

Location/period	Ars. nome III BCE	Kerkeosir. II BCE	Karanis II CE	Philadelphia II CE	Theadelphia II CE
Est. population	90,000	1,178	3,565	3,333	2,325
Cultivable km ²	1,350	12.3	33.9	27.6	18.6
Cultivated km ²	1,100	6.6	—	—	17.7
People/cultivable land	67	91	105	121	125
People/cultivated land	82	178	—	—	131

¹ *Source:* Rathbone (1990: 130–4) and Clarysse and Thompson (2006: 94–5); cf. Alston and Alston (1997: 202–4).

Previous scholars have attempted to extrapolate from the densities for the Ptolemaic and Roman Fayyum in order to estimate the total Egyptian population.²¹ [Table 2.2](#) also presents such extrapolations, not because this is a reliable method but only in order to compare them in the next two sections with modern data.²² For the “Fayyum by density” row in [Table 2.2](#), the third-century BCE figure is simply taken over from [Table 2.1](#). The other figures in that row of [Table 2.2](#) are based on the village densities listed in [Table 2.1](#), extrapolating to the entire Fayyum on the assumption that there were 1,350 km² of cultivable land and 12,000 inhabitants (late Ptolemaic) or 28,000 (Roman) for the Arsinoite capital. These seem to provide reasonable estimates of the Fayyum population. Thus, if the density of the three Roman villages was typical of the rural Fayyum,

then there were probably about 170,000–200,000 inhabitants in the nome during the Roman period.²³

Table 2.2 *Population extrapolations from the Fayyum*

Data source	Ars. nome III BCE	Kerkeosir. II BCE	Karanis mid-II CE	Philadelphia mid-II CE	Theadelphia mid-II CE
Fayyum by density	(90,000)	135,000	170,000	190,000	200,000
Egypt by density	2,600,000	3,100,000	4,000,000	4,400,000	4,500,000
Egypt by 23:1 ratio	2,500,000	3,500,000	4,400,000	4,900,000	5,100,000

¹ *Source:* Fayyum by density = people/cultivable land from [Table 2.1](#) $\times 1,350 \text{ km}^2$ + urban population, except the III cen. BCE figure from Clarysse and Thompson (2006: 100); Egypt by density = Fayyum by density $\times 22,500 \text{ km}^2$ + urban population; Egypt by 23:1 ratio = Fayyum by density $\times 23$ + population of the two main cities. See the explanation in the text for details.

To go one step further, however, from the Fayyum to the whole of Egypt presents too many difficulties. For starters, the total area of cultivable land in Egypt is unknown. An inscription on a wall of the temple of Edfu from the Ptolemaic period gives the area as 27 million arouras of which 9 million arouras or 25,000 km^2 was cultivable.²⁴ As Scheidel notes, these are both simply multiples of three. The subtotals for Upper and Lower Egypt are no less suspiciously divisible, though the totals could be on the right order of magnitude.²⁵ Most scholars estimate about 20,000–25,000 km^2 , so the figure of 22,500 km^2 of cultivable land is adopted in [Table 2.2](#).²⁶ The figures in [Table 2.2](#) labeled “Egypt by density” are reached by extrapolating from the population density in each place and adding 1.1 million (Ptolemaic) or 1.65 million (Roman) for the combined urban population, including all the nome capitals and Alexandria.²⁷

This approach to the total population of Egypt seems just as unreliable as another method of extrapolation. According to data from 1895 to 1910 discussed in the next section, the ratio between the Egyptian population excluding Alexandria and Cairo and the Fayyum population was 23:1. The figures in [Table 2.2](#) labeled “Egypt by 23:1 ratio” multiply the

estimated population of the ancient Fayyum in each column by 23 and then add 400,000 inhabitants for the two largest cities in the Ptolemaic period and 500,000 in the Roman period. Thus one adduces a total population of Roman Egypt of around five million people. Because this method takes account of the relatively low population density of the Fayyum visible in the 1895–1910 data, it is somewhat more plausible than the density-extrapolation, which assumes that the Fayyum was typical. However, the Fayyum's population varied considerably throughout Egyptian history, so it is quite uncertain whether the ratio in 1895–1910 was comparable to the Roman period. The same ratio would certainly be implausible for the third century BCE, when the Fayyum had barely been settled. Similarly, it is probably inappropriate after the steep decline in agriculture and population in the late third and early fourth century CE.²⁸

Ancient sources provide only a few hints about the density of other regions with which to compare the Fayyum and are completely inadequate for establishing the ratio of its population to Egypt as a whole. For villages of the Mendesian nome in the Delta, Rathbone was able to estimate a density of 100 people/km² on cultivable land. He marshals this evidence in support of a similar figure of 120 people/km² based on the Fayyum villages in order to find a total population that could be used to check the competing tallies found in literary sources.²⁹ Based on the Edfu inscription, he assumes 25,000 km² of cultivable land to arrive at a total of three million inhabitants excluding Alexandria. He interprets his result as confirmation of Diodorus' figure of “not less than three million” in the late Ptolemaic period. Rathbone therefore rejects Diodorus' claim in the same passage that the figure was seven million “in the old days,” that is, before the Ptolemaic period, as well as Josephus' figure of 7.5 million excluding Alexandria in the early Roman period, which was allegedly obtained from poll-tax records.³⁰


These literary sources have little if any credibility. Rathbone rightly criticizes the figures of other authors for rhetorical fabrication but still attempts to salvage Diodorus' figure of three million even though it is a glaring illustration

of the phenomenon.³¹ Diodorus explicitly connects his estimate of three million with his supposition that there were 3,000 villages. This invention based on multiples of three and ten simply assumes that there were 1,000 people in each of his 3,000 villages, plus an urban population, which might explain his phrase “*not less than* three million.” Hence Diodorus’ figure is just as suspect as those found in other literary sources.³²

Though the ancient evidence for population density in the Nile Valley is scarce, it has not been adequately considered in previous studies. According to a text concerning mummification revenues in Edfu, Clarysse estimates a total population of 70,000 for the Apollonopolite nome in the south during the late third century BCE. It is conceivable that the 2,800 dr. mentioned in the text was the total revenue for the 1 dr. per mummy tax for the entire nome in one year.³³ It is impossible to control for whether the number of deaths in that particular year was typical, making the estimate of the nome population based on Roman census lists or model-life tables highly uncertain. Together with the area of cultivable land in the Apollonopolite nome estimated by Christensen, the figure implies a population density of 444 people/km² in the Apollonopolite nome. That would make its density roughly four times higher than the Fayyum. According to Butzer's estimation method using settlement patterns, the Apollonopolite nome was twice as dense as the Fayyum in the New Kingdom (c. 1550--1070 BCE). He ranks the Apollonopolite nome (380 people/km²) second only to the neighboring Elephantinite nome (542 people/km²) as the densest population in this period, though his figures reveal nothing more than a rough order of magnitude.³⁴ These studies suggest that the Apollonopolite was at least one order of magnitude denser than the Fayyum. Legitimate doubts can be raised about the reliability of the ancient evidence. However, the following comparisons with modern data indicate that a stark contrast in population density between the Fayyum and Delta on the one hand and the Nile Valley on the other is likely.

Table 2.3 *Population density in Egypt, 1895–1910 (ordered*

high to low)¹

Density on cultivable land	People/km ²		Province	Region
	Cultivable	Cultivated		
 <p> Low Density Medium Density High Density </p>	672	766	Aswan	Nile Valley
	624	632	Minufiya	Delta
	523	583	Giza	Nile Valley
	502	529	Qena	Nile Valley
	498	503	Girga	Nile Valley
	483	526	Qalyubiya	Delta
	481	491	Asyut	Nile Valley
	378	422	Daqahliya	Delta
	362	386	Minya	Nile Valley
	350	356	Beni Suef	Nile Valley
	330	384	Sharqiya	Delta
	291	353	Fayyum	Fayyum
	242	365	Gharbiya	Delta
	230	316	Buhaira	Delta

¹ Source: Egypt (1911).

Comparisons with modern egypt

Table 2.3 presents the mean densities for cultivable and cultivated land in each Egyptian province excluding urban governorates such as Cairo and Alexandria between the years 1895 and 1910. Annual figures of cultivable and cultivated land are available for these years and the population of each province can be derived from the censuses of 1897 and 1907, assuming constant annual growth for non-census years. The regional differences based on cultivable land are also depicted in the map in Table 2.3. As the figures in the second column indicate, the shading on the map would not change much if the density on cultivated land were depicted instead. What springs out immediately from these data is the low population density of the Fayyum and the Delta compared to the Nile Valley. The density on cultivable land for all provinces combined (excluding urban governorates) was 365 people/km². The density for the Fayyum was 291 people/km². The combined density for all Delta provinces (Minufiya, Qalyubiya, Daqahliya, Sharqiya, Gharbiya, and Buhaira) was 318 people/km². For the Nile Valley provinces (Aswan, Giza, Qena, Girga, Asyut, Minya, and Beni Suef) it was 418 people/km².

These regionally specific data provide an illuminating

pattern that is consistent with the ancient evidence, showing that the Fayyum was underpopulated relative to the Nile Valley. The Delta was quite diverse, with the density tending to decrease as one moves outward from its apex toward the Mediterranean. The comparability is underscored by the ecological factors that account for this pattern, which were as applicable in antiquity as they are more recently.³⁵ On the other hand, it is important to stress that any inferences about antiquity are valid only for the *relative* density of each region and remain limited even in this respect. Changes in the demographic regime brought on mainly by improvements in sanitation and health care boosted Egypt's population size rapidly in the late nineteenth century. Hence the *actual* figures for density from 1895 to 1910 are probably beyond the upper limits for the Ptolemaic and Roman periods.³⁶

The differences between the Fayyum and the Delta on the one hand and the southern Nile Valley on the other that were noticed in the ancient evidence are also pronounced in these modern data. Between 1895 and 1910, the modern Aswan and Qena districts, which overlap with the ancient Apollonopolite nome around Edfu, were more than twice as densely populated as the Fayyum. Butzer came to the same conclusion for the Fayyum and the Edfu area in the New Kingdom.³⁷ The high density (444 people/km²) implied in Clarysse's calculations for the Apollonopolite nome in the early Ptolemaic period is plausible and, even if one allows for a large margin of error, contrasts with the Fayyum by at least one order of magnitude. The reclamation of the Fayyum decreased its density radically in the third century BCE by making new land available for cultivation while the number of immigrants to the Fayyum from the Nile Valley increased gradually. However, even when the population density of the Fayyum reached 120 people/km² in some villages of the second century CE, this would still have been low compared with the Nile Valley.

Neither extrapolations from the ancient data nor direct comparisons with the 1895–1910 data enable one to estimate the *actual* (as opposed to the *relative*) regional

densities of Egypt in the Ptolemaic and the Roman period with any accuracy. By the end of the nineteenth century, population growth had surpassed what was plausible in antiquity, even if the regional distribution of that population remained similar. The *relative* densities in Egypt in 1895–1910 cast doubt on any extrapolation from the Fayyum or the Delta because these regions were thinly populated areas compared to the Nile Valley. The remainder of this section develops an alternative approach. Based on estimates of the *actual* population density in Greco-Roman Egypt, it reaches the same conclusion independently.

To gauge the actual density in antiquity, one would like to have comparative evidence for periods when the mortality conditions and agricultural productivity were similar. Unfortunately, the available sources for medieval and early modern Egypt are even less helpful for population density than the ancient evidence.³⁸ The only available figure that is directly comparable with the ancient data is from the village of Damas of the Daqahliyya province of the Delta in 1813/1814. Its 120 people/km² is close to the rural densities for the Fayyum and the Delta in the Roman period just as would be expected if the regional pattern were consistent.³⁹ In view of the lack of a more diverse data set for local densities, establishing a rough estimate for the overall rural population density in early nineteenth-century Egypt is the only way to control for such regionally specific information. The population of early nineteenth-century Egypt was the product of its historical conditions, but by comparing those conditions with the Ptolemaic and Roman period one gains at least a very rough impression of a plausible density at that time.

To begin with population size, scholars tend to reject the contemporary counts from the early nineteenth century as implausible undercounts, arguing for new estimates that range from 3.8 to 4.5 million inhabitants around 1800.⁴⁰ McCarthy arrives at 3.8 million by a ratio-extrapolation much like the one used in [Table 2.2](#) above to estimate five million in Roman Egypt. He starts with the estimated Cairo population in the Napoleonic *Description de l'Égypte*, a

population which later sources suggest was about 5.5 percent of the Egyptian total, on the assumption that this ratio remained constant.⁴¹ He then reconstructs the population based on reasonable growth rates, while factoring in major demographic events. One sign that McCarthy's starting point may be too low, however, is that his reconstruction implies that the 1847 census was accurate, when he admits that even the 1887 census was an undercount. Others prefer to work backwards from the first reliable census in 1897, which is methodologically more defensible and leads to higher estimates for the early nineteenth century.⁴²

The population around 1800 is the product of its own unique historical circumstances and thus serves merely as a benchmark for comparison. As McCarthy points out, the Egyptian population had probably reached one of its lowest points in centuries by 1800 due to outbreaks of pestilence, including bubonic plague and cholera, as well as incessant warfare.⁴³ Similarly, Scheidel suggests that ancient disease pools in Roman Egypt were more benign than those in the early nineteenth century.⁴⁴ Though Ptolemaic Egypt suffered from internal instability, Roman Egypt enjoyed peace and freedom from major epidemics until the late second century CE, which would have favored population growth.⁴⁵ If the low figures for cultivation area in the early nineteenth century are to be believed, then Roman Egypt could certainly have sustained a population larger than four million.

To turn to cultivation area, the figures reported before the late nineteenth century are beset by two problems. First, before the 1860s the metric equivalent of the feddan is uncertain. Second, these figures suggest an astonishing rise around the middle of the century. As mentioned earlier, historians tend to assume 20,000–25,000 km² of cultivable land in Ptolemaic and Roman Egypt. In 1896 the area of cultivable land was approximately 25,000 km², of which only 22,000 km² (88%) were actually cultivated.⁴⁶ It is important to distinguish between *cultivable* and *cultivated* land because the earlier figures are often given in terms of

cultivated land.⁴⁷ O'Brien has assembled data for the cultivated area in Egypt, starting with the cadastral survey of 1813, which reports either 12,827 or 13,488 km² of cultivated land depending on the equivalence of 3,054 feddans.⁴⁸ If that too were 88% of the cultivable area, it corresponds to less than 15,000 km², much less than 20,000–25,000 km² that historians assume for Ptolemaic and Roman Egypt.⁴⁹

If only 15,000 km² were cultivable in 1813, it would suggest either: (a) the cultivable area in the Ptolemaic and Roman period was actually less than 20,000–25,000 km²; or (b) the cultivable area in Ptolemaic and Roman Egypt was large enough to support a far greater population than the four million who lived on just 15,000 km² in the early nineteenth century. A low level of cultivation at the beginning of the nineteenth century is consistent with the high mortality from war, disease, and famine in the 1780s and 1790s that caused a breakdown in the irrigation system.⁵⁰ On the other hand, the cultivated areas given for 1813 and 1844 stand out conspicuously from the area reported from 1852 onwards, when it hovered around 20,000 km² (corresponding to 22,500 km² of cultivable land) until the end of the nineteenth century. One should not have too much faith in the accuracy of the early reported figures, but the ambitious campaign of Muhammad Ali to reclaim land and restore its productivity does suggest that the area cultivated in 1813 was indeed far less than 20,000 km².⁵¹

Finally, it is possible to estimate the actual population density. The overall density in early nineteenth-century Egypt depends on whether one accepts the low (McCarthy) population of 3.8 million or the high (Panzac) population of 4.5 million and whether one accepts the low (1813) area of 13,000 km² of cultivated land or the high (1852) area of 20,000 km². The high-population-low-area scenario equals 350 people/km² on cultivated and perhaps 300 on cultivable land. The low-population-high-area scenario yields 190 people/km² on cultivated and 170 on cultivable land. For reasons noted in the paragraphs above, the high-population-

low-area scenario seems more plausible. It would be quite conservative to conclude that the population density was not lower than 200 people/km² on cultivable land around 1800–1815. Given what has already been said about the demographic and agricultural crisis of the late eighteenth and early nineteenth century, one expects that conditions in antiquity favored a population larger than four million. Scheidel reasonably estimates four to six million inhabitants and 20,000 km² of cultivated land during the Roman period. This implies an ancient population density in Egypt of about 300 people/km² on cultivated land and 200 on cultivable land.⁵²

These results can be compared with the ancient evidence discussed in the previous section. One immediately observes that the local densities in the Fayyum (90–125 people/km²) and the northeastern Delta (100 people/km²) are low compared with the estimated overall population density in early nineteenth-century Egypt. Second, the extrapolation from these local densities produces a total population of Greco-Roman Egypt that is too low (3–4 million). By assuming 120 people/km² based on villages in the Roman Fayyum, Rathbone finds a rural population of just three million during a period when, he himself argues, the urbanization rate was almost double that of 1882 and there were two centuries of peace and economic development.⁵³ Not only does he have to assume that the Fayyum's rural density was typical but his result is also incompatible with the fact that roughly four million people inhabited Egypt at the beginning of the nineteenth century, when much less land was being cultivated after decades of high taxation, famines, wars, and plagues.

In summary, the ancient evidence for population density reflects the same regional variations that are attested in the nineteenth century. This conclusion follows from the two independent methods of comparison that have been pursued here. The first uses the detailed data from 1895 to 1910 broken down by region in order to gauge their *relative* densities. In other words, the actual figures are disregarded but the contrasts among regions are supposed to be a

reflection of geographical constraints that remained more or less the same since antiquity. These constraints are discussed in the next section. The ancient evidence from the Arsinoite, Mendesian, and Apollonopolite nomes seems to corroborate this pattern. This shows a contrast between the thinly populated Fayyum and Delta and the densely populated Nile Valley. Because the best demographic data for Greco-Roman Egypt are from the Fayyum, the temptation to extrapolate from there has proven irresistible for many ancient historians. One does not have to throw out the evidence from the Fayyum just because it was not typical. However, the only way to evaluate its significance is to know what biases it may contain, which involves thinking deeply about the ecology of the Fayyum and comparing modern evidence.

The second method was to use an estimate of the overall population density in the early nineteenth century as a benchmark. Even though the data are better, Egypt in 1895–1910 serves as a poor baseline because modern medicine and technological advances were beginning to raise the overall population density to levels that were unattainable in antiquity. Early nineteenth-century Egypt, by contrast, still had a pre-modern mortality regime and agricultural system. Moreover, all indications we have suggest that mortality was higher and productivity was lower in Egypt around 1800 than it was during the Roman period. Even under these unfavorable circumstances, the overall density on cultivable land, excluding the largest urban centers, was still more than 200 people/km². This early nineteenth-century population density should probably be regarded as the ancient minimum, at least for Roman Egypt. When one compares it with the evidence available for rural areas in the Fayyum and the Delta during the Ptolemaic and Roman period, it becomes clear that they must have been less densely populated than Egypt as a whole and correspondingly that the Nile Valley must have been more dense than average. It inspires confidence that these two methods lead to the same conclusion since they rely on completely independent sources.

Agricultural geography

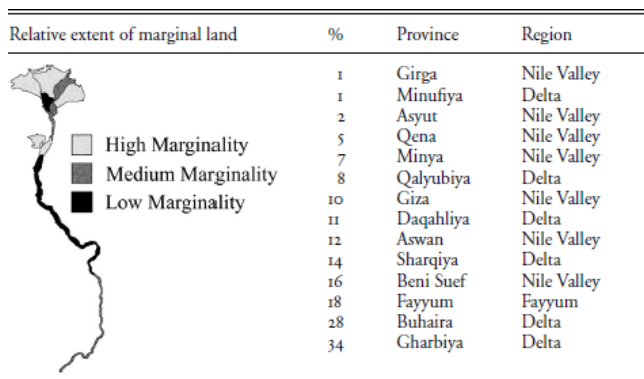
The argument for continuity in the regional pattern of population density implies certain ecological constraints. Further hydrological and geo-archaeological research will hopefully provide more information with which to assess and modify the claims in this section. O'Connor has already called attention to the importance of modern geographical observations, especially when combined with archaeological exploration, for understanding the political economy of ancient Egypt.⁵⁴ The basis for agriculture throughout Egypt was the annual flood of the Nile until the completion of the Aswan High Dam in 1971. Agriculture was facilitated in Egypt by natural basins running along the Nile and its branches that would be filled with water between August and November when the river flooded. When it receded, it washed away accumulated salts and left a layer of fertile silt for planting crops. Human enhancement of this natural hydrological system using canals and dikes for irrigation and drainage created a series of linked basins that would maximize water-use and regulate how long it remained on the fields.⁵⁵ The system of basin irrigation was practiced throughout Egypt. However, the Delta and the Fayyum were always unique for their need for extensive irrigation and drainage networks to prevent salinity and soil degradation in many areas.

Modern census officials attributed the sharp differences in population density between the Nile Valley and the Delta in the early twentieth century to differences in the productivity of the soil.⁵⁶ Obviously, not all land was less productive in the Delta, nor does it follow that the most productive land was always in the Nile Valley, as micro-variations could diverge from regional norms. The apex of the Delta was one of the most productive regions in Egypt. Nevertheless, once the huge amount of marginal land in the Delta and the Fayyum is factored in, the overall quality of the soil there was lower. The prevalence of marginal land indeed shows a strong correlation with population density. On average between 1895 and 1910, 16% of the theoretically cultivable land in Egypt was left uncultivated annually. There were

stark regional differences in population density, as seen in Table 2.3. If we compare those results with Table 2.4, the link between population density and the extent of marginal land is obvious.

Looking at the cultivated instead of the cultivable area in Table 2.3 shows that the regional pattern was the same even if we exclude the extent of marginal land and calculate population density only on the basis of land that was actually cultivated in a given year. This suggests firstly that more arable land was out of cultivation in regions with high marginality and secondly that more land under cultivation had been recently reclaimed or was being kept under cultivation only with difficulty. In other words, a higher proportion of marginal land is probably indicative of lower productivity on arable land overall. The conclusion is borne out again several decades later, in data from the mid-twentieth century, thanks to precise measurements of average yields and soil fertility.⁵⁷ They illustrate the same regional pattern: the most productive areas were the southern Delta and the Nile Valley, while the least productive areas were the Fayyum and the northern Delta.⁵⁸ The use of chemical fertilizers after 1900 introduces a potential bias into this later data set but, as Hamdan notes, “despite the increasing doses of artificial fertilizers, yields are much greater on basin lands,” so their effect was more likely to boost aggregate yields than to distort regional patterns.⁵⁹

Table 2.4 *Marginal land in Egypt, 1895–1910 (ordered low to high)*¹



¹ Source: Egypt (1911).

It is unsure whether the low amount of marginal land and the high soil productivity in Middle Egypt (now excluding the Fayyum) relative to Upper Egypt accurately reflects conditions in antiquity. One of Muhammad Ali's construction projects in the nineteenth century was to build a solid retaining dike along the Nile that may have aided Middle Egypt more than Upper Egypt.⁶⁰ Alleaume suggests that there was a gradual long-term decline of the Theban region and a shift in productivity northward caused by the overuse of artificial irrigation.⁶¹ In any case, such differences between Middle Egypt (excluding the Fayyum) and Upper Egypt are not as relevant here as the marginality of the Fayyum and the northern Delta and the contrast between those regions and the Nile Valley.

The salt content of the soil was one factor affecting agricultural fertility and likewise the extent of marginal land throughout Egyptian history.⁶² This is obvious in the northern Delta, with its high water table contaminated from the sea, where salt marshes formed. However, soil salinity is a natural phenomenon that does not depend on the proximity to the sea. In low-lying areas, water collects and evaporates, leaving saline minerals to collect in the soil. Irrigating land puts it at higher risk, particularly in arid climates with high evaporation rates, because more dissolved salts seep into the soil from canals and fields. Crops absorb the water and leave salts in the soil, which

makes it difficult for subsequent crops to absorb nutrients, causing harvests and agricultural productivity to decline.⁶³ Thus soil fertility was largely a function of hydrology. Preventing soil degradation requires good drainage, as it depends on the equilibrium of inflow and outflow of salt minerals. The annual flood provided natural drainage for most of the Nile Valley. The deposits flushed out of the Nile Valley accumulated in salt marshes and arable soils in the Delta.⁶⁴

The Fayyum likewise stands outside of this natural, fertility-renewing hydrological system. "The only areas of Egypt with major salinization problems were the Fayum Depression and the Delta. In the former, the problem lay in the fact that the flow of water diverted from the Nile through the Fayum Canal ended in a closed basin, where excess water had no other escape."⁶⁵ The Fayyum received the flood through the Bahr Yusef, a branch from the Nile Valley. It had no natural drainage of the Nile water after it passed through the Lahun gap at the entrance to the Fayyum except for its lakes and marshes, which gradually shrunk due to Ptolemaic and Roman land reclamation.⁶⁶ A regulator at Lahun governed the stream of water but was thrown open for the peak of the flood to allow as much water as possible to travel into the main feeder canals and their offshoots in order to cover the basins along them throughout the Fayyum. Canals had to transport the irrigation water into the large Wadi and Bats Drains, which emptied into Lake Moeris in the north, though water in the south may have formed another lake in the Gharaq basin.

In view of the nature of the sources, the effect of salinity on agriculture in the Ptolemaic and Roman periods is based on inference rather than direct observation. Interestingly, however, there are also ancient references to soil salinity problems in agriculture, which do come mostly from the Fayyum. Land surveys often refer to land that is uncultivated due to salinization, the earliest of which is from the third century BCE.⁶⁷ A papyrus perhaps from the village of Berenikis Thesmophorou refers to ten arouras of shore land that were salted "because the shore has been flooded."⁶⁸

Land surveys from Kerkeosiris show that in 118 BCE 269 arouras (6%) could not be cultivated due to salinization out of the 4,630 arouras of cultivable land in the village. In a few cases, the texts indicate that the cause was drainage water seeping into neighboring fields, while in others, salinization occurred in fields adjacent to irrigation canals due to the seepage of water typical of such systems.⁶⁹ In comparison with the number of references to salinization in the Fayyum and the Delta, it is seldom mentioned in papyri from the Nile Valley and then usually from the Herakleopolite nome neighboring the Fayyum.⁷⁰ Cultivation on the north side of Lake Moeris in the village of Soknopaiou Nesos continued into the early Roman period but was abandoned thereafter, presumably as the lake became too saline.⁷¹

Waterlogged soil is one of the major causes of salinization and is likewise the result of improper drainage.⁷² The attestations in the papyri from the Fayyum to waterlogged (*embrochos*) soil are even more frequent than for saline land, but the same term was used to indicate fields under the regular inundation and appears throughout Egypt, so it is a poor guide to irrigation failures and regional differences in productivity.⁷³ In the Dakhla oasis of Egypt's western desert during the Roman period, cultivators tried to reduce waterlogging and salinization by lifting water with *saqqiya* stations onto fields atop porous sandy deposits, which do not absorb it.⁷⁴ Without such measures, which were possible only in exceptional circumstances, the result of long-term water absorption was the formation of saline soils called solonchaks, which geologists have identified in the Delta, the Fayyum, and the western oases.⁷⁵

The relevance of soil salinity is its correlation with poor harvests and low population density in Egypt.⁷⁶ It would help explain why the Fayyum has maintained a low rural population density during the whole period for which there is reliable evidence, that is, from the nineteenth century to the present. Other factors that might have impacted population density are similar to the salinity problem. The Fayyum and the Delta posed greater challenges of irrigation

and drainage than the Nile Valley, which not only contributed to salinization but also threatened long-term losses of land to the desert if canals and dikes were poorly maintained.⁷⁷ Such maintenance would entail higher costs than the regular basin irrigation practiced in the Nile Valley. While the Nile flood was the basis for Egyptian agriculture almost everywhere, large areas of the Delta and the Fayyum required artificial waterways in order to direct the flood to their more peripheral agricultural basins. These would still imply higher investments of labor even if the level of productivity were equal. Thus reclamation and maintenance were vulnerable to periodic labor shortages, which would have been exacerbated in the Fayyum and outer Delta by the diminishing returns to cultivating marginal land under these circumstances.

Finally, the existence of large areas of standing water from the lakes, basins, marshes, and canals in the Fayyum would have created breeding grounds for malarial insects. While direct evidence from antiquity is lacking, the conditions favor the assumption that the Fayyum suffered higher mortality rates due to malaria just as it has in modern times.⁷⁸ Any combination of these geographical factors could have contributed to a high proportion of marginal land and a low population density of the Fayyum and the Delta relative to the Nile Valley in antiquity. It is difficult to imagine environmental conditions in the past being favorable to dense settlement on arable land in these regions as long as they were threatened by salinization due to the disequilibrium of salt intake from the Nile and by failures of the irrigation system that might leave fields at risk of desertification, especially in peripheral areas. The high proportion of marginal land in the period 1895–1910 underlines the basic geographical differences between the Fayyum and the Nile Valley.

Potential counterevidence

As noted above, land prices and rents provide a poor guide

to the real value of land. Some of the data appear at first sight to falsify the hypothesis that arable land was overall less valuable in the Fayyum than in the Nile Valley, so it is necessary to explain more fully why this evidence presents a misleading portrait. First, prices refer to land that is already private or land whose value is influenced by the degree of exclusivity of the land rights being conveyed. Second, the proportion of public or royal land to private land in the region may influence rents for private land since the operative variables are the competition for leases of private land and the tenants' access to other leasing opportunities.

There are some land prices prior to the Roman period but they offer a poor guide to regional differences. Land sales in Egyptian law entailed a permanent transfer of exclusive rights that are also heritable. Sales and transfers of land are attested throughout Egyptian history. However, in those cases where prices can be ascertained, they are surprisingly low.⁷⁹ In [Chapter 5](#) it is argued that the sudden jump in land prices from the Ptolemaic to the Roman period reflects a change in fiscal status. To anticipate the argument of that chapter, the low price of land in pre-Roman Egypt is best explained as a consequence of its high and unpredictable tax rate. Ptolemaic private land was assessed with variable harvest taxes that represent a greater burden than the low flat rate charged for private land in the Roman period. To a lesser degree, innovations in how title to private land was registered and enforced under Roman rule may have made property rights more secure. When buyers acquired land in the Roman period they expected exclusive, heritable, and transferable rights but also less intrusive claims to its revenue by the state and temples than in the Ptolemaic period. In other words, the level of privatization has a strong influence on the price of land. Moreover, land prices refer almost by definition only to private land and exclude inalienable land, which clearly also had some value. Hence prices are not a good proxy for relative scarcity.

The data for rents seem to challenge the hypothesis that land was less scarce in the Fayyum than in the Nile Valley, so they require a brief analysis. All things being equal, rents

on land should be lower in the Fayyum than in the Nile Valley because land was abundant and less productive while labor was relatively scarce. However, the rents dating from the period roughly 40–160 CE, when there is sufficient comparable evidence available, indicate at first sight that Fayyum rents were higher than in the Oxyrhynchite and the Hermopolite nomes. Bagnall interprets several exceptionally high rents as evidence for overall productivity: “The Fayyum was in Roman times among the most productive land of Egypt, and hence of the entire empire.”⁸⁰ This claim directly contradicts the principal argument of this chapter, so it is important to examine its basis.

The problem with the Fayyum data is that the highest rents come from a single area near the village of Tebtunis. Archaeologists have identified the remains of a long retaining wall in this area as evidence for water storage used in perennial cultivation.⁸¹ Remarkably, most of the references in the papyri to the practice of double cropping during the Roman period come from the same vicinity.⁸² One lease for double-cropped land fetched a rent of over 15 artabas per aroua.⁸³ Even where there is no explicit reference to perennial cultivation, the wheat rents shown in [Figure 2.1](#) suggest that land in this area was also double cropped or was at least highly fertile, with a median rate of 9.5 artabas per aroua. Wealthy landowning families like the descendants of Patron in the second century CE bought estates in the vicinity of Tebtunis, which in their case generated a median wheat rent of 12.7 artabas per aroua according to the surviving sources.⁸⁴ The area around Tebtunis, however, contrasts sharply with the extensive but marginal land of the northern Fayyum, where the median wheat rent was just 4.9 artabas per aroua.⁸⁵ Taken together, the Arsinoite rents are slightly higher on average than the rates in the Oxyrhynchite and Hermopolite nomes shown in [Figure 2.2](#). However, as soon as one removes the Patron archive or the other Tebtunis texts, rents in the Nile Valley become higher on average.

Figure 2.1 Fayyum wheat rents

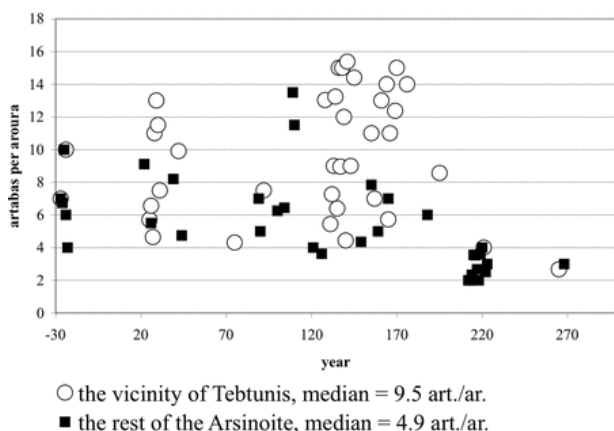
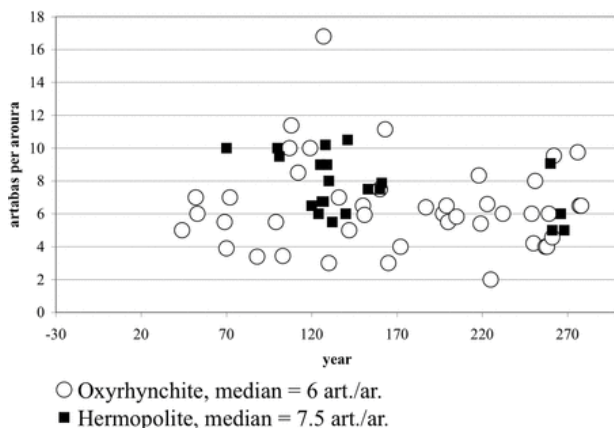


Figure 2.2 Nile Valley wheat rents



One cannot assume that the highest rents would turn up only in the most productive regions. The evidence from the Fayyum suggests that the value of land there varied depending on its location in the network of irrigation and drainage. That marginal land was more prevalent in the Fayyum by no means rules out that *some* land in the Fayyum was highly productive. In the late nineteenth and twentieth centuries, the percentage of land under perennial cultivation was not related to fertility; 65% of the Fayyum could be double cropped at that time even though its area of marginally productive land was also one of the most

extensive in Egypt.⁸⁶ Such abundant and low-value marginal land in the Greco-Roman period was most likely to remain under communal tenure arrangements. Those who possess the relatively scarce and favorably positioned land would have more incentive to demand exclusive rights. The ancient sources are insufficient to test directly whether public or private land was more fertile in the Fayyum but there are indirect signs. Rents on public land were generally lower, never coming close to the rates attested in the Patron archive, and there is no evidence for the kind of double cropping that was practiced on some private estates.

Given the patterns of tenure, using the rents on private land in each region as a proxy for overall productivity can be misleading. Whereas in the Fayyum private land constituted less than 50% in villages from which there is evidence, data from several areas in the Nile Valley, including the Hermopolite and Oxyrhynchite nomes, suggest that at least 75% of the land was classified as private.⁸⁷ Rents on private land in the Fayyum were thus unrepresentative of the whole region, where there was more public land, which was arguably less productive. The different fiscal status of private and public land in Roman Egypt could also have exerted an influence on rents. The low rate of one artaba per aroura on private land provided an incentive to accumulate larger estates and lease them to tenants.⁸⁸ Having more land charged at this low rate in the Nile Valley created demand among landowners for tenant farmers and a greater supply of land for lease. It could have had the effect of lowering rents in areas with abundant private land. The point is that wheat rents are not any more persuasive than land prices at falsifying the argument of this chapter.

Demographic and environmental change

One could object on methodological grounds that historical changes undermine the comparability of ancient and modern data and cast doubt on the existence of ecological patterns that affect institutional development. Three variables that

were glossed over in previous sections deserve more detailed treatment here: environment, population, and agriculture. Historically specific settlement and immigration patterns or local mortality rates would complicate regional contrasts. Changes in climate, hydraulics, and soil fertility would likewise distort their comparability. New agricultural techniques, the introduction of new crops and double cropping as well as investments in irrigation infrastructure potentially could alter the ecological pattern presented in this chapter even further. These factors are separable from one another only to a limited extent, so it is appropriate to treat them together.

Conclusions drawn from the 1895–1910 data could be challenged on the grounds that Muhammad Ali and his successors during the nineteenth century modernized Egypt and transformed its agricultural geography. Descriptions of the ancient Egyptian irrigation system are consistent with Willcocks' modern study, showing a system of interlinked basins separated by dikes.⁸⁹ However, Butzer has rightly challenged the perception, based partly on Muhammad Ali's projects, that the irrigation system of pharaonic Egypt required centralized management.⁹⁰ Others scholars have similarly emphasized that the systematization of basin irrigation and the application of centralized corvée labor fundamentally altered the ecological regime. In particular, a massive bank was ploughed up along the Nile for much of its length, to hold back and control the flood and to facilitate perennial irrigation. Alleaume and Eyre contrast Egypt's nineteenth-century irrigation network with the depiction in the Napoleonic *Description de l'Égypte*, which shows a less standardized system of flood-recession basins where regional differences within the Nile Valley were more pronounced and where water management would have required less centralized control.⁹¹

Nevertheless, if the reported figures of less than 15,000 km² for the cultivated area in the early nineteenth century are correct, then Egypt's initiatives under Muhammad Ali and his successors brought Egypt's productivity back up from an extraordinarily low level.⁹² It is impossible to reconcile

the estimated 20,000–25,000 km² of cultivable land in Greco-Roman Egypt with Eyre's assertion that the irrigation system of the Napoleonic period was representative of Egypt's pre-modern hydrological regime. In view of the other signs of decay and depopulation in the late eighteenth century, it is also unlikely. Historians are probably right to assume that a system of connected basins resembling, if not in every detail, the one described by Willcocks was used for irrigation in Ptolemaic and Roman Egypt.⁹³ The papyri also reveal a system in which most peasants throughout Egypt were required to perform *corvée* labor on dikes and canals in their area.⁹⁴ Perhaps this work often required only local management by village headmen with the supervision of nome officials, but occasionally more ambitious projects were undertaken by the central state that required population movement or mass mobilization such as Ptolemy II's reclamation of the Fayyum and Augustus' use of Roman legions to restore abandoned canals.⁹⁵ Moreover, much of the nineteenth-century land reclamation was undertaken in the marginal northern Delta, where gains in agriculture were easily lost without determined effort.⁹⁶

One may wonder whether different geopolitical factors shifted the relative population densities to a certain extent. The growth of Cairo as the capital city in the Islamic period may have influenced the high density in the surrounding rural districts, Minufiya, Qalyubiya, and Giza showed in [Table 2.3](#) according to the 1895–1910 data. One might expect a similar concentration around Alexandria in the western Delta in antiquity. On the other hand, even in 1897 when Alexandria's population was 320,000, the neighboring Buhaira district still had the lowest population density in Egypt. This is indicative of the marginality of the northern Delta, making it less fit for intensive arable agriculture. Similarly, twentieth century soil and harvest samples indicate that the southern apex of the Delta, corresponding to Minufiya, Qalyubiya, and Giza, was one of the most productive agricultural areas in Egypt.⁹⁷ The relatively low rural population densities in the Delta and the Fayyum even through the twentieth century, as the population continued to soar, lend support to the assumption of long-term regional

differences.⁹⁸

The ecological marginality of the northern Delta and its low population density evident in the 1895–1910 data are borne out in recent historical studies of earlier periods. Meeks points to the long history of reclamation and resettlement of marginal areas in the Delta as one possible factor behind the proliferation of land donations in the Delta during the Third Intermediate Period (c. 1070--664 BCE).⁹⁹ Blouin's research on the Mendesian nome of the Roman period relates the natural environment, including problems of salinization, to the prevalence of pastoralism and extensive land use.¹⁰⁰ The carbonized tax registers from this nome even reveal that a special fiscal category, “marsh land” (*limnitikê gê*), was developed to encompass the ecologically marginal areas that were unfit for intensive arable agriculture but still taxable. Blouin compares such land to swampy areas attested in the Fayyum.¹⁰¹ Similar tax registers from the early Ottoman period reveal an agricultural crisis in the Delta after the Black Death and the Ottoman conquest, when the ecology of the region made agricultural recovery and reclamation especially difficult.¹⁰² Moreover, during the same period, one finds an interesting pattern of internal migration within the Delta after the depopulation crisis. The trend was for migrants to move from marginal areas, especially from the periphery of the Bahaira province in the western Delta, toward areas with the most fertile soils, that is, close to the apex of the Delta.¹⁰³

Climate change is another factor that could conceivably have altered the patterns of agricultural productivity and population density in Egypt between ancient and modern times. In response to current anxieties about global warming, research on environmental history is intensifying and promises to revolutionize the study of the ancient economy. The data collected so far point to a Roman Warm Period lasting roughly from the second century BCE to the third century CE.¹⁰⁴ Its effects varied remarkably but a warmer, drier climate in continental Europe may have extended the growing season there, causing yields and population to rise, while parts of Italy became less fertile. In

Roman Egypt and North Africa, on the other hand, recent studies suggest a wetter, more humid environment favorable to agricultural productivity.¹⁰⁵ The geographer Claudius Ptolemaeus recorded rainfall in Alexandria in the early second century CE that was much higher than the current amount and corroborates the wetter pattern observed by al-Biruni around 1000 CE.¹⁰⁶ It is still not obvious how far such moisture would have extended inland nor what impact it would have had on regional patterns of soil fertility and population density. Climatic differences on this scale cannot have changed the fact that Greco-Roman Egypt was an arid land where agriculture in most areas depended on the Nile flood rather than precipitation.¹⁰⁷

Those skeptical about using the 1895–1910 data for land use and demography may also wonder why nothing has been mentioned about the expansion of double cropping in the late nineteenth century. The surveyors distinguished not only the cultivable and cultivated areas of land but also *cropped* area. Cropped area is the cultivated area plus the area that was cultivated more than once in the same year. The cropped-area data from 1895 to 1910 are not taken into account in the estimates of cultivation area and the calculation of population density. Most scholars generally believe that it was less significant before 1880.¹⁰⁸ If these data are calculated into the cultivable area, the higher density of the Nile Valley would increase even more relative to the sparser Fayyum and Delta, thus reinforcing the pattern observed in this chapter. In the Fayyum, the average double-cropped area was an astonishing 65% of the cultivable area in 1895–1910. In the Delta, it was 40%. In the Nile Valley, it was only 17%.¹⁰⁹ Such land was devoted to crops suitable to that season, namely, cotton, rice, and maize, which were not grown in antiquity except perhaps cotton.¹¹⁰ In the late eighteenth century, the French expedition reported that the area under perennial cultivation was an estimated 25% of the land in the Delta and 17% in Upper Egypt, but the latter is presumably inflated by its inclusion of the Fayyum.¹¹¹

There is some evidence for double cropping in the

Ptolemaic and Roman periods, exclusively from the Fayyum region.¹¹² The most explicit evidence comes from the archive of the manager of the large estate in the Fayyum belonging to Apollonios, the finance minister under Ptolemy II. Apollonios sent a letter to Zenon, his estate manager, urging him to experiment with a new three-month grain crop on his estate.¹¹³ Others identify this three-month grain with the so-called Syrian wheat mentioned in other papyri, but the connection is uncertain.¹¹⁴ In the southern Fayyum, archaeologists have interpreted the remains of an extensive wall as evidence for a huge basin once used for perennial irrigation and double cropping.¹¹⁵ It is precisely in this part of the Fayyum, in the vicinity of Tebtunis, where one finds textual evidence for double harvesting as well as the unusually high rents discussed in the previous section.¹¹⁶

Notwithstanding experiments such as these, there is not yet compelling evidence to establish that double cropping had a major impact on Egyptian agriculture in this period. The absence of other references, especially in village land surveys, where one would most expect them, casts doubt on its widespread adoption.¹¹⁷ It required expensive water lifting and drainage from perennial streams or areas with a low water table.¹¹⁸ If double cropping were concentrated mostly in the Fayyum and Delta, as seems likely, that would suggest that the population density in terms of cropped area was even lower there than elsewhere in Egypt. If the practice were widespread in the Ptolemaic and Roman periods, it would give further reason to suspect that the total population was much larger than in the early nineteenth century, when double cropping was hardly practiced. Only if double cropping were concentrated in the Nile Valley in antiquity would it suggest that the relative population densities in the Fayyum and the northern Delta have been underestimated. However, the modern data suggest that double cropping, to the extent that it was employed, was used precisely in these ecologically marginal areas that relied more on artificial irrigation.

One might suspect that the causal correlation between high salinity in the Delta and the Fayyum and low

population density is based on an anachronistic analogy with agrarian problems that arose after the completion of the Aswan High Dam in 1971. Even if the scale of the problem in the late twentieth century was unprecedented, the problem of salinization in Egypt was not new. Prior to the Aswan Dam, it was only a local and regional problem, affecting above all the Fayyum and northern Delta, where evaporation and insufficient drainage caused silt to accumulate instead of being washed out and replaced annually. The phenomenon is well known to archaeologists of southern Mesopotamia, where salinization probably caused long-term disruption to agriculture in antiquity.¹¹⁹ While one tends to assume that Egypt's annual floods prevented similar problems from arising, this is true only for the Nile Valley proper.¹²⁰ Thus modern irrigation techniques were not responsible for the patterns of salinity and land quality across Egypt that are reflected in land-use surveys of the 1890s and in the samples of soil composition and crop yields of the 1950s. These patterns more likely reflect a formation of the natural environment caused by the hydrology of the Nile, which was similar in antiquity.

Geography is neither static nor deterministic, as human activity has the potential to alter the environment within certain bounds. Originally a freshwater lake, Lake Moeris has seen an increase in its salt content since antiquity that may soon make aquatic life unsustainable. Recent research has been able to follow this increase during the twentieth century, but the interpretation of longer drill core samples is frustrated by problems of dating. It was already a salt-water lake at least one century before the construction of the Aswan Dam, and its salinity level cannot be attributed to recent climate change.¹²¹ It seems reasonable to suppose that the salinization of Lake Moeris is what caused the abandonment of agriculture and settlement at Soknopaiou Nesos on its northern shore in the 230s CE.¹²² This happened about a century before the broader collapse of agriculture on the irrigated periphery of the Fayyum, especially in the northern villages.¹²³ The processes could be linked: reclamation used more freshwater, leaving less of it to replenish the lake, allowing salts to accumulate in adjacent

soils through seepage and evaporation along irrigation canals and around the lake. Unfortunately, archaeologists of Greco-Roman Egypt have rarely gone looking for this kind of evidence, so there is more work to be done.

Comparing the population of Egypt around 1800 to the population of Ptolemaic and Roman Egypt involves some admittedly impressionistic judgments about historical change. Egypt's four million inhabitants and its much reduced area of cultivation (allegedly 13,000 km²) in the early nineteenth century were presented above as an absolute minimum for the Roman period, when peace, low taxes, a wetter climate, and respite from epidemics made conditions for population growth more favorable. However, it is impossible to gauge these effects and to differentiate the Ptolemaic period more precisely, even if one suspects that revolts, civil wars, and fiscal pressure had reduced the population in the second and first centuries BCE.¹²⁴ Evidence from the Fayyum is sometimes cited to illustrate Ptolemaic depopulation and labor shortage, but this may simply reflect its ecological marginality and chronically high land-to-labor ratio relative to the Nile Valley.¹²⁵

Population change is central to the Boserup-Demsetz model that links this chapter to the next one and to the remainder of the book. If institutional changes favoring agricultural intensification were found to follow an independent rise in population from the Ptolemaic to the Roman period, it would strengthen a key hypothesis in this model. Population growth from Ptolemaic to Roman Egypt is plausible, but it cannot be quantified with the available evidence. Bagnall and Frier assume a growth rate of 0.2% per year during the first two centuries CE because this is consistent with the female age distribution and model-life tables.¹²⁶ The expansion of the city limits of Alexandria from the Ptolemaic to the Roman period is often taken as evidence for population growth in the capital.¹²⁷ The level of urbanization in the Roman period is assumed to be greater than in the Ptolemaic period, partly because the cities were so large in absolute terms, but direct comparisons are impossible.¹²⁸

The expansion of settlement in the Fayyum is often taken to indicate the demographic impact of Greek immigration in the early Ptolemaic period as well as subsequent population growth. Its reclamation in the third century BCE provided an opportunity to award plots of land to Greek soldiers for development. One taxation register gives an incomplete total of about 5,000 adult male military settlers.¹²⁹ Some scholars presume that a status designation used in the Roman Fayyum, the 6,475 “settlers” (*katoikoi*), refers back to an original number of Greek military settlers.¹³⁰ In addition, about 4,000 adult male civilians were registered for tax purposes as Greeks (*Hellenes*), most of whom probably were ethnic Greeks, but Jews and privileged Egyptians sometimes obtained the status too.¹³¹ Together these two groups may have constituted 35% of the Fayyum's population in the mid-third century BCE. However, the Greeks were surely overrepresented in this region. The total number of Greeks immigrating to Egypt was probably much less than the Fayyum evidence would suggest: perhaps 200,000 or only 5% in a total population of four million, according to one recent estimate.¹³² Besides the Fayyum, many of these would have settled in the newly established Greek cities of Alexandria and Ptolemais rather than in the countryside.

Population growth from early to late Ptolemaic Egypt has been proposed as one explanation for the low density of the Fayyum in third century BCE. Clarysse and Thompson interpret the low population of 85,000–95,000 as evidence that Egypt had just 1.5 million inhabitants and then grew to three million by the first century BCE, which is the figure reported by Diodorus.¹³³ Similarly, Mueller proposes an unrealistically low Alexandrian population of 50,000 people on the assumption that Egypt's cities followed a typical rank-size hierarchical distribution and that Krokodilopolis – because it was a nome capital – ranked among the forty largest cities.¹³⁴ These extrapolations are untenable because the region was underpopulated relative to the Nile Valley.

On the other hand, population growth *within the Fayyum* is the best explanation for the difference between the low figure for the early Ptolemaic Fayyum and higher ones

attested in late Ptolemaic and Roman-period villages there. Greek immigration was one factor, but many of the new inhabitants obviously came from other parts of Egypt. The names of their new villages are often identical to their place of origin elsewhere in Egypt. These suggest that the Delta and Middle Egypt contributed more to settlement of the Fayyum than the Thebaid.¹³⁵ A mid-third century BCE official letter reports on the arrival of a workforce of hundreds of people in the southwest Fayyum and the procurement of the tents for them.¹³⁶ The manager Zenon offered a section of the estate to a community of peasants, who had their own council of elders, on the gift estate that Ptolemy II awarded to Apollonios, his finance minister, for reclamation and development.¹³⁷ The frequency of land redistributions as well as the large plots available to each peasant also seem to be linked to the demographic situation in the third century BCE.¹³⁸ Even if the government encouraged or coercively engineered population movements to the Fayyum, the availability of land for cultivation must have been its own powerful incentive.¹³⁹

There are some indications that settlement and agriculture expanded beyond their Ptolemaic limits during the Roman period. Overall population growth in Egypt may have contributed to this trend, but it is impossible to tell how much because internal migration to the Fayyum could have continued. In the mid-third century BCE, Krokodilopolis barely counted as an urban center with no more than 4,500 inhabitants or 5% of the Fayyum's population, but it was the largest settlement and the capital of the nome.¹⁴⁰ Four centuries later, in the Roman period, the city had at least 28,000 inhabitants or about 15% of the Fayyum's population.¹⁴¹ The figures in [Table 2.1](#) above could be misleading as an index of larger trends, but they suggest a rise in population density on cultivable land from perhaps just 70 people/km² in the third century BCE to 90 in the late second century BCE (though this is based on only one village after a period of crisis) to 100–120 in the second century CE.

Comparisons with modern Egypt establish points of reference with which to compare historical circumstances.

Using them is not meant to imply that the population of Egypt or of any particular region remained static over time. The Antonine plague in the late second century CE is thought by some to have reduced the population of Egypt by as much as one-third. For example, at the village of Karanis in the northeast Fayyum, the population dropped from 3,600 to 2,300 between the 150s and 170s CE.¹⁴² It is still a matter of debate whether the plague's magnitude and economic effects were similar to the later Justinianic plague and the Black Death of the Middle Ages, which made labor scarce. At least in the case of the Black Death, population decline seems to have contributed to a long-term degradation of the irrigation system in Egypt that lowered agricultural productivity.¹⁴³ Other environmental factors as well as social dynamics such as warfare and taxation could also affect the size and density of the Egyptian population. Taxation registers from the second century CE suggest that fiscal pressure contributed to depopulation in some villages of the Mendesian nome in the Delta even in the decades before the outbreak of the Antonine plague.¹⁴⁴ More than one hundred years after the Antonine plague, in the early fourth century CE, productivity and population on the outer rim of the Fayyum dropped precipitously and many villages were ultimately abandoned to the desert.¹⁴⁵ The cause of this collapse may have been a combination of factors, including a labor shortage, political negligence, and environment degradation.

Conclusion

Population and geography are not deterministic forces. They are part of an ecology in which many factors are interconnected. The purpose of this chapter has been to identify regionally specific patterns in the Egyptian environment that might be expected to influence the development of agrarian institutions. As the preceding section has shown, no factors are completely independent of the others. Even the environment is subject to enhancements or degradation caused by human intervention. Population dynamics likewise are subject to historically specific conditions. On the other hand, as variables go, the

agricultural geography and regional population distribution in Egypt probably remained relatively constant from the Ptolemaic to the Roman period and even into modern times. This makes it useful as an analytical tool for gauging the effects of other variables such as political change on agrarian institutions.

The low density of the Fayyum and the Delta in antiquity was demonstrated using two methods. First, this was the pattern observable in the data collected after 1895. Second, the figures based on ancient sources from the Fayyum consistently yield a total population density for Egypt as a whole that is too low by the standard of early nineteenth-century estimates. One would have to assume that the population of Roman Egypt was about 30% lower than it was during that troubled period despite much more land being under cultivation. Within the Ptolemaic and Roman periods there must have been fluctuation in population density in response to war, disease, and immigration that would have affected landholding patterns. Unfortunately, the evidence is insufficient to allow us to follow such changes even in a single region like the Fayyum, much less in Egypt as a whole. We have to be content with knowing about broad regional patterns in population density for assessing its impact on the level of privatization.

The link between regional differences in population density and Egypt's geography is an important step in this book's argument about land tenure. If regional densities varied more with systems of property rights than they did with environmental constraints, then it would be impossible to distinguish any causal relationship between population density and privatization. More so than the environment, property relations were mutable in Egyptian history.¹⁴⁶ The fact that the Fayyum and the Delta continued to be the least densely populated regions in Egypt from the nineteenth and even through the twentieth century, even as virtually all of the arable land in Egypt became privately owned, suggests that the environment had a stronger effect on population density.

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- ¹ For the size of Egypt's regions in antiquity, see Butzer (1976: 83); Bowman (2009: 180–1).
 - ² Boserup (1965).
 - ³ Stone (2001: 164).
 - ⁴ Stone (2001).
 - ⁵ Demsetz (1967); see [Chapter 1](#), p. 20, for fuller references to the literature.
 - ⁶ For excellent overviews, see Rose (1998) and Merrill (2002).
 - ⁷ Issawi (1961); G. Baer (1962; 1966).
 - ⁸ Egypt (1909: 3).
 - ⁹ This is not meant to imply that privatization automatically increases productivity in all circumstances, since communal land tenure systems may perform as well or better under the right ecological conditions; cf. Nugent and Sanchez (1998).
 - ¹⁰ This includes classical authors such as Josephus, Diodorus, and Polybius, as well as the Edfu inscription purporting to relate the total of arable land in Egypt; Rathbone (1990); Scheidel (2001: 220, 245–7).
 - ¹¹ P. Lille I 10 = P. Count 1 (254–31 BCE; Ghoran, Arsinoite); Clarysse and Thompson (2006: 94–5) follow Bagnall and Frier (1994: 103 n. 35) in using 2.909, while other scholars adopt 3.1 as a standard multiplier, e.g. Rathbone (1990: 130).
 - ¹² Butzer (1976: 37–8); Rathbone (1990: 130); Clarysse and Thompson (2006: 101); Manning (2003: 107).
 - ¹³ Rathbone (1990: 130); Manning (2003: 107); Clarysse and Thompson (2006: 100).
 - ¹⁴ For the 80% cultivation rate in the Fayyum, see below. This rate ought to be taken as a maximum for the third century BCE, making the density on cultivated land higher, because labor shortage would prevent much of the theoretically cultivable land from being used annually.
 - ¹⁵ See further below.
 - ¹⁶ Monson (2007d: 376–80).
 - ¹⁷ Crawford (1971: 117–21).
 - ¹⁸ Rathbone (1990: 133).

- ¹⁹ Alston and Alston (1997: 201); Clarysse and Thompson (2006: 100); for the higher estimate, Rathbone (1990: 121) and Tacoma (2006: 41–2).
- ²⁰ Rathbone (1990: 119–22); Tacoma (2006: 39–55).
- ²¹ Rathbone (1990); Clarysse and Thompson (2006: 100–102); Mueller (2006: 96).
- ²² The figure for the Arsinoite nome in the third-century BCE already includes the capital Krokodilopolis with about 3,750 inhabitants: Clarysse and Thompson (2006: 100). For Kerkeosiris in the second century BCE, 12,000 inhabitants – between 3,750 and 28,000 – are somewhat arbitrarily added for Krokodilopolis. In the Roman period 28,000 inhabitants are included for the Arsinoite capital, which had been renamed as Arsinoe: Alston and Alston (1997: 201), Clarysse and Thompson (2006: 100); cf. Rathbone (1990: 121) and Tacoma (2006: 41–2) for 44,000 inhabitants; the Alexandrian population is estimated at 350,000: Scheidel (2004: 27–9, 31). See below note 127.
- ²³ This is certainly more realistic than Butzer's (1976: 83, 93) estimate of 312,000 inhabitants for the Fayyum in the mid-second century BCE, followed by Manning (2003: 48). It reached that level only in the 1890s: Boak (1926: 364).
- ²⁴ Schlott (1969: 160–9); cf. Lloyd (1983: 326).
- ²⁵ Scheidel (2001: 220).
- ²⁶ See e.g. Bowman (2009: 181). Corresponding to 20,000 km² of cultivated land, 22,500 is roughly the area recorded in the decades after 1852; the earlier records are suspiciously low but not impossible: O'Brien (1968: 172–4); Scheidel (2001: 221).
- ²⁷ Bagnall and Frier (1994: 55) estimate fifty cities with 25,000 residents for 1.25 million for the second century CE.
- ²⁸ Bagnall (1985).
- ²⁹ Rathbone (1990: 108–10, 130–7).
- ³⁰ Diodorus Siculus 1.31; Josephus, *Bellum Judaicum* 2.385; Rathbone (1990: 103–7).
- ³¹ For the rhetoric of numbers in literary texts, see Duncan-Jones (1974: 238–56); Scheidel (1996: 224–5; 2001: 220,

245–7); cf. note 127 below.

- 32 The poet Theocritus, *Idyll* 17, lines 81–4, likewise uses multiples of three for rhetorical effect in describing Egypt's population; Josephus, *Bellum Judaicum* 2.16, at least claims to base his estimate of 7.5 million on poll-tax returns, leaving out the Alexandrians, who were exempt, though scholars doubt whether these returns would yield an accurate total given variations in the rate: Russell (1966: 70); Rathbone (1990: 106); cf. Jördens (2009: 331–2) for the omission of the Alexandrians due to tax exemption.
- 33 Clarysse (2003: 21 n. 14) and Clarysse and Thompson (2006: 95 n. 20), where the difference in nome size and density is not considered in the calculations; for the burial tax, cf. Muhs (2005b: 88–95).
- 34 Butzer (1976: 74, 76–80).
- 35 See the next section on agricultural geography.
- 36 For possible variations in this pattern since antiquity due to geopolitical and climatic factors, see below.
- 37 Egypt (1911).
- 38 Russell (1966: 70) accepts the unreliable low figures of Diodorus and early nineteenth-century population counts as his point of reference in arguing for even lower medieval levels; Michel (2002: 217 n. 58) similarly depends on Roman-period and early nineteenth-century estimates for village population densities in discussing the early Ottoman evidence for land use and population.
- 39 Cuno (1999: 308–9); Michel (2002: 217 n. 58) notes that the other Daqahliyya village that Cuno cites, Badaway with 446 people/km², was a commercial center and so does not represent a rural density.
- 40 McCarthy (1976); Panzac (1987); Scheidel (2001: 201–15).
- 41 McCarthy (1976: 6); cf. Panzac (1987: 15 n. 13).
- 42 Panzac (1987); Scheidel (2001: 208–15).
- 43 McCarthy (1976: 1, 15).
- 44 Scheidel (2001: 216–17).
- 45 Frier (2001) discusses population growth in Roman Egypt before the Antonine plague; for stability and revolts in Ptolemaic and Roman Egypt, see [Chapter 7](#), pp. 251–6.

- ⁴⁶ Egypt (1911: 260–1).
- ⁴⁷ Scheidel (2001: 223) appears to confuse them when he criticizes historians who adopt 25,000 km² for ancient Egypt's total area, pointing to the lower reports of *cultivated* area in the nineteenth century, but these scholars can be just as vague about whether they mean cultivable or cultivated land.
- ⁴⁸ O'Brien (1968: 172–4).
- ⁴⁹ For regional differences in the rate of cultivation, see below.
- ⁵⁰ Cuno (1992: 30–2); Scheidel (2001: 246–7).
- ⁵¹ Scheidel (2001: 221) accordingly doubts the reliability of the early twentieth-century figures; Richards (1982: 21) associates the rise in cultivated area with Muhammad Ali's reclamation efforts.
- ⁵² Scheidel (2001: 178 n. 137, 223, 246–7).
- ⁵³ Rathbone (1990: 109, 121).
- ⁵⁴ O'Connor (1983: 213, fig. 3.7, 233 fig. 3.12, 246–9).
- ⁵⁵ Ibrahim and Ibrahim (2003: 73–4).
- ⁵⁶ Egypt (1909: 3).
- ⁵⁷ Simons (1968: 18–20, esp. 19a); the classification of productivity for 1959–1963 is based on sample yields for a bundle of crops, where first class is the most productive and fifth class the least. Rents and wheat yields show a similar regional pattern, though the Thebaid was much less productive than Middle Egypt: Simons (1968: 67a, 125d, 130a–b).
- ⁵⁸ Cf. Fanchette (1997: 28) for a fertility map of the Delta, which corresponds to the higher population density nearer to its apex.
- ⁵⁹ Hamdan (1961: 128).
- ⁶⁰ Hamdan (1961: 126–8); Eyre (2004: 160–1).
- ⁶¹ Alleaume (1992: 315–22, esp. 320–1).
- ⁶² Service Agronomique (1955: 30): “the yields [in the Fayyum and the northern Delta] are weak because the land is very heavily clay, cooler and often more or less saturated with sodium, which gives the clay colloids their deflocculated state that is less conducive to the development of plants,” quoted in Simons (1968: 18).
- ⁶³ Millington (1993: 13).

- 64 Hamdan (1961: 125); Ibrahim and Ibrahim (2003: 64); White (2006: 191–6).
- 65 Cordova (2005: 120), whose statement is based on Hamdan (1961: 133): “In the northern half of the delta as well as in the Fayum, the salt content of the soil exerts a major restrictive influence on cultivation. It is related in the latter to the inadequate internal drainage to Lake Karun, which lies below sea level.”
- 66 Rathbone (2001: 1113–15).
- 67 P. Petr. II 30 B; Schnebel (1925: 15); Bonneau (1992).
- 68 P. Tebt. III.2 998; cf. P. Tebt. III.2 826; Bonneau (1971: 72; 1992: 67); Rathbone (1996b: 50, 54) locates Berenikis Thesmophorou possibly in the Gharaq basin.
- 69 Crawford (1971: 48–9, 73, 106, 188–9).
- 70 Bonneau (1992: 64).
- 71 Hobson (1984); cf. Hassan (1986b: 497–8), who notes that decreases in lake size throughout Egyptian history – whether due to low floods, as he suggests (495), or to expanding irrigation – probably contributed to higher salinity, which would negatively affect agricultural productivity in the surrounding area.
- 72 Hamdan (1961: 128–9).
- 73 Bonneau (1992).
- 74 Brookes (1990: 119–22).
- 75 Millington (1993: 9, 12–13).
- 76 Wahba (1993: 89).
- 77 Hamdan (1961: 126).
- 78 Scheidel (2001: 75–91, 142, 175–6); for higher mortality in malarial regions in Italy, cf. Sallares (2002: 115–67, 283–5); for the marshiness of the Fayyum in the Greco-Roman period, see Bonneau (1982).
- 79 K. Baer (1962); Menu (1997); see Chapter 5, pp. 193–8.
- 80 Bagnall (1985: 297).
- 81 Garbrecht and Jaritz (1990: 166–70).
- 82 Indicated with the phrase, “for sowing and re-sowing” (*eis sporan kai episporan*): P. Mil. Vogl. II 79 [restored] (143 CE; Tebtunis); P. Mil. Vogl. IV 212 (109 CE; Tebtunis); P. Mil. Vogl. VII 303 (164 CE; Tebtunis); P. Tebt. II 375 (140 CE; Tebtunis); other attestations of the phrase are largely limited to Tebtunis: W. Chr. 331 (113 BCE; Tebtunis); P.

- Mich. II 121 (42 CE; Tebtunis); cf. “double-sown wheat” (*diasporos puros*) in SB VIII 9830 (84–96 CE; Arsinoite), line 15; Wegner ([forthcoming](#)) connects a ring dam and a sudden rise in rent in a Demotic land lease from Ptolemaic Tebtunis with double cropping.
- ⁸³ P. Tebt. II 375 (140 CE; Tebtunis, Arsinoite).
- ⁸⁴ On the archive and estate of Patron's descendents: Kehoe (1992: 74–92); Clarysse and Gallazzi (1993); Smolders (2005). The rate for wheat is attested twelve times in the archive: Drexhage (1991: 161–2).
- ⁸⁵ The northeastern Herakleides district (median wheat rent, 6.0 art./ar.) was apparently more productive than the northwestern Themistos district (median wheat rent, 4.0 art./ar.).
- ⁸⁶ The data on perennial cultivation are discussed in the next section.
- ⁸⁷ See [Chapter 3](#).
- ⁸⁸ See [Chapters 5](#), pp. 191–9, and [8](#), pp. 279–81.
- ⁸⁹ Lloyd (1976: 75–6; 1983: 326–7); cf. Willcocks (1913: 299–311).
- ⁹⁰ Butzer (1980).
- ⁹¹ Hamdan (1961: 126–8); Alleaume (1992: 307–9); Eyre (2004: 160–1).
- ⁹² Cf. O'Brien (1968: 172–4); Scheidel (2001: 221).
- ⁹³ For ancient terms for basins, see Bonneau (1993a: 45–8, 51–5); cf. Crary (1949) for detailed description of traditional basin agriculture in Upper Egypt during the twentieth century.
- ⁹⁴ Bonneau (1993a: 121–74).
- ⁹⁵ See Rathbone (1990: 110–14) and Thompson (1999a: 109–13) for central planning in the early Ptolemaic reclamation; Jördens (2009: 401–4) for similar state involvement in the early Roman reclamation efforts.
- ⁹⁶ Hamdan (1961: 126–7); for a map of agricultural expansion in the Delta from 1800 to 1870, see Richards (1982: 40).
- ⁹⁷ Simons (1968: 16–20); Fanchette (1997: 28).
- ⁹⁸ Kiser (1944: 386–8); Wahba (1993); but cf. Hamdan (1961: 125).
- ⁹⁹ Meeks (1979: 619); Butzer (1975).

- 100 Blouin (2007a; 2007b; 2009; forthcoming); cf. Hamdan (1961: 135).
- 101 Blouin (2007a: 148; forthcoming); *limnitikê gê*: P. Thmuis 1 (180–192 CE; Thmuis, Mendesian), col. 75, line 17, col. 76, line 2, col. 81, line 10, col. 91, line 1, col. 141, lines 7, 17; SPP XVII, pp. 13–19 = C. Pap. Jud. III 494 (c. 200 CE; Thmuis, Mendesian); P. Ryl. II 221 (III cen. CE; Thmuis, Mendesian), lines 138, 221, 236, 239; for marsh taxes in money, *limnitika*: P. Ryl. II 213 (late II cen. CE; Thmuis, Mendesian), *passim*; for marshes in the Fayyum, where those categories are not attested, cf. Bonneau (1982).
- 102 Michel (2002: 214–18).
- 103 Michel (2001: 253–4, 261–3).
- 104 Ljungqvist (2009: 17, 25); Scheidel (forthcoming a: Appendix); Hin (forthcoming: Chapter 3).
- 105 Reale and Dirmeyer (2000); Reale and Shukla (2000); Scheidel (forthcoming a: Appendix); Hin (forthcoming: Chapter 3).
- 106 See Lehoux (2007: 161, 167–8, 261–309, 430–70) for the texts of Ptolemaeus and al-Biruni; Scheidel (2001: 54–5) conveniently tabulates the data but doubts their accuracy.
- 107 Butzer (1976: 26–38); Hassan (1986a: 65; 1986b: 494–5); Muzzolini (1985: 23); cf. Schilman et al. (2001: 169–70).
- 108 Hamdan (1961: 127–8); O’Brien (1968: 172); Ruf (1993: 194–5); Beaumont (1993: 29); Ibrahim and Ibrahim (2003: 74); Crary (1949).
- 109 Egypt (1911).
- 110 Ruf (1993: 194); Egypt (1911) gives data on the types of crops planted in the summer season; for cotton production in the western oases in the Roman period, see Bagnall (2008: 29–30).
- 111 Hamdan (1961: 124).
- 112 Schnebel (1925: 145–60); Hennig (1967: 54–5).
- 113 P. Cair. Zen. II 59155 = SB III 6733 (256 BCE; Philadelphia, Arsinoite); Johannesen (1923).
- 114 Thompson (1930); Crawford (1979: 140–1); cf. Berlin et al. (2003).

- ¹¹⁵ Garbrecht and Jaritz (1990: 166–70).
- ¹¹⁶ See above, note 82.
- ¹¹⁷ In Kerkeosiris, for example, the area planted with crops never exceeds the size of the landholding both for cleruchs and royal farmers; Crawford (1971: 148–59); P. Tebt. IV 1103.
- ¹¹⁸ Hamdan (1961: 123–4).
- ¹¹⁹ Jacobsen and Adams (1958).
- ¹²⁰ Cordova (2005: 120–1).
- ¹²¹ Flower et al. (2006); cf. Hassan (1986b: 483): “The drop in lake level during early Ptolemaic times marked the end of the freshwater lake...” However, he nowhere elaborates on this claim (cf. 491, 495, 497).
- ¹²² Bagnall (1985: 297); Rathbone (1990: 114); cf. Hobson (1984) for agriculture in early Roman Soknopaiou Nesos.
- ¹²³ Bagnall (1985: 296–8) discusses its possible causes.
- ¹²⁴ Thompson (2003) briefly describes the economic condition of Egypt in Cleopatra VII's reign; cf. Maehler (1983) for a more positive view.
- ¹²⁵ Preaux (1939: 492–3).
- ¹²⁶ Bagnall and Frier (1994: 87–8).
- ¹²⁷ Scheidel (2004) cautiously conceives of rapid population growth in Alexandria during the third century to 300,000 by 200 BCE then up to as much as 400,000 by 100 CE; for the expansion of the city limits as an indication of Roman-period growth, cf. Delia (1988: 277–8). Diodorus Siculus 17.52.6 reports 300,000 “free people” in the mid-first century BCE, but the figure is as dubious as his estimate of 3,000,000 for the total population and 3,000 for the number of villages. Cf. notes 22 and 31 above.
- ¹²⁸ Rathbone (1990: 109; 2007b: 705–6); Bagnall and Frier (1994: 53–6); Bowman (2000: 176–9); Frier (2001: 141).
- ¹²⁹ P. Lille I 10 = P. Count 1 (254–31 BCE; Ghoran, Arsinoite); Clarysse and Thompson (2006: 94, 148–54).
- ¹³⁰ Rathbone (1990: 113); Fischer-Bovet (forthcoming).
- ¹³¹ Clarysse and Thompson (2006: 138–48).
- ¹³² Fischer-Bovet (forthcoming).
- ¹³³ Clarysse and Thompson (2006: 102) rightly acknowledge that their calculation could be inaccurate because the Fayyum may not have been a typical region.

- ¹³⁴ Mueller (2006: 93–4, 96); cf. Monson (2007d: 386) and Hoffman and Klin (2006).
- ¹³⁵ Clarysse (2007: 74–5; 80–81).
- ¹³⁶ P. Lille Dem I 32 (264/263 BCE; Ghoran, Arsinoite).
- ¹³⁷ Rostovtzeff (1922: 73–4); Tomsin (1952a: 99–100); cf. P. Lond. VII 1954–5 (257 BCE; Philadelphia, Arsinoite).
- ¹³⁸ Monson (2007d: 376–80).
- ¹³⁹ Cf. Mueller (2006: 55, 62–3).
- ¹⁴⁰ Clarysse and Thompson (2006: 100).
- ¹⁴¹ Rathbone (1990: 121); Alston and Alston (1997: 201); Clarysse and Thompson (2006: 100); Tacoma (2006: 41–2).
- ¹⁴² Rathbone (1990: 132–4).
- ¹⁴³ Rathbone (1990: 114–19); Scheidel (2002; forthcoming b); Bagnall (2002); cf. Borsch (2005) on the effects of the Black Death, though his statistics are often unreliable, on which see Munro (2006).
- ¹⁴⁴ Lewis (1980; 1993d); Bagnall (2002: 115).
- ¹⁴⁵ Bagnall (1985).
- ¹⁴⁶ Cf. Borsch (2005: 34, 54).

Part II The land-tenure regime

Chapter 3 The regionalism of land tenure

Introduction

This chapter suggests that the extent of private land rights in Ptolemaic and Roman Egypt was linked to variation in population density. According to the evolutionary model of land rights derived from Boserup and Demsetz, economic and ecological conditions creating scarcities of land drive the development of property rights.¹ Individualized property rights and agricultural intensification replace more extensive uses of land that often involve some sort of communal land rights. This process is not necessarily in one direction, so it is just as possible for communal land rights to develop in areas formerly in private ownership – for example, if lands were abandoned and then reverted to more extensive marginal uses by peasant communities. The theory maintains that regional institutional differences can be attributed to the underlying economic, demographic, or geographical structures that shape the incentives of local landholders. It is a bottom-up approach to institutions insofar as it assumes that the state's classification and enforcement of land rights merely responds to local realities and demands. Such an approach is clearly one-sided and insufficient for explaining all aspects of the land-tenure regime. However, it forms one crucial piece in the larger argument developed in this book about the transition from Ptolemaic to Roman Egypt.

Regional differences in land tenure between the Fayyum and Upper Egypt are easily recognizable. Much of this chapter is devoted to establishing the correlation between the extent of private land rights and areas that are supposed to be highly productive and densely populated, according to the results of the previous chapter. However, a correlation is not the same as a causal relationship, which cannot be

directly observed but only inferred on the basis of some general theory. The evolutionary theory presents an alternative to Rostovtzeff's explanation for the differences in land tenure between the Fayyum and Upper Egypt. He regarded the insecure tenure of peasants in the Fayyum as symptomatic of the burden imposed by the centralized and oppressive Ptolemaic state. The cause of their misery, he argued, was that the Ptolemies had a free hand in determining tenure relations in the Fayyum while in Upper Egypt they met with entrenched feudal structures, where more secure hereditary leaseholds were established within temple estates.²

The notion that land rights were insecure in the Fayyum because the Ptolemies had a free hand in developing the region assumes that the rulers sought to suppress the emergence of private property. A corollary of this theory is the view that the development of private land rights (e.g., on cleruchic land) was a symptom of the decline of Ptolemaic power in the second and first centuries BCE.³ The prevalence of private land rights in the Nile Valley seems to be consistent with either explanation. However, Rostovtzeff's view, even as it has been revived and modified in more recent scholarship, relies on a now outdated understanding of Egyptian legal and fiscal institutions. First, the fiscal status of royal land leased to peasants was identical to privately owned land in Ptolemaic Egypt, so there could have been no loss to royal revenue if the king had recognized private property on royal land in the Fayyum after its reclamation.⁴ Second, the customary tenure rights of cultivators were much less susceptible to arbitrary violation by royal officials than previously thought.⁵ On the contrary, the cultivation of royal or public land in Ptolemaic and Roman Egypt afforded peasants a privileged status, including access to interest-free seed loans and other incentives.⁶ Third, regional differences in local landholders' demand for public land in Roman Egypt seem to support the environmental theory against Rostovtzeff.⁷

Much of this chapter is devoted to an analysis of the official land categories used in the papyri. Land surveys and

registers provide the best quantitative evidence for the extent of private land relative to public or royal land in Ptolemaic and Roman Egypt. They also reveal the status of special categories such as cleruchic and temple land under the Ptolemies as well as where they fit within the simple dichotomy between public and private land that emerged in the Roman period. Comparing how these categories were distributed from village to village and nome to nome provides a method of testing the correspondence of land rights with regional differences, especially between the Fayyum and the Nile Valley.

Nevertheless, the legal and administrative terms used in the papyri for various land categories are insufficient for understanding Egyptian land tenure as a social and economic phenomenon. Translating such terms into Roman or modern civil law categories can also be unhelpful, especially when it introduces aspects that were foreign to the Egyptian legal context. With respect to property rights, Manning has suggested adopting Hohfeld's conception of property as a set of social relationships or a "bundle" in which multiple parties had rights and duties. Landholders in the Nile Valley obtained a more exclusive bundle of rights to land – including the rights to sell it to whomever they wished or to bequeath it to their children – but these rights were limited by the overarching claims of the state and temple to collect revenue.⁸ One thus thinks of property rather as a spectrum with exclusive private ownership on the one end and communal property subject to competing social claims on the other. The advantage of this approach is that it is sensitive to the social context in which property rights are embedded.

The Ptolemaic and the Roman land classification system served primarily fiscal purposes. That means that the categories themselves, even the Roman distinction between public and private land, are an imperfect guide to the extent of what we might define as private ownership. For this reason it is misleading to draw too stark a contrast between Ptolemaic royal ownership and Roman private property merely because Ptolemaic sources refer to royal land and to

rent paid to the king, whereas the Roman administration employed different terms. The economic concept of a bundle of rights on a spectrum with different degrees of exclusivity provides a better framework for analyzing Egyptian land tenure relationships. This calls for a more contextual approach, which will be developed in [Chapter 4](#), one that puts less emphasis on official terminology and more on the actual rights that landholders exercised and the institutions for protecting them.

Ptolemaic land classification

The historian Diodorus Siculus, writing at the end of the Ptolemaic period but basing his description of Egypt on the ethnographer Hecataeus, who visited in the reign of Ptolemy I, claims that the land was divided into three categories. One-third of it was royal land, one-third was temple land, and the other third was allotted to soldiers. In all three categories, he suggests, free tenants leased and cultivated the land.⁹ As an imprecise generalization, this tripartite division captures some important aspects of the Ptolemaic agrarian economy. Temples played an enormous role with their estates, while the king used grants of land to compensate soldiers, and peasants on royal land paid rent to the king. Similarly, the cultivators of temple land paid rents to the temple and soldiers frequently leased out their allotments. However, to characterize all cultivators in Egypt as leaseholders underestimates the variety of land-tenure institutions. Categories such as royal and temple land do not imply any uniform set of legal obligations between owners and possessors or between landlords and tenants.

One must turn to the papyrological documentation, including official land surveys, taxation lists and receipts, as well as private contracts, in order to specify the meaning of these and other categories used to classify land in the Ptolemaic period. The problem with any categorization is that Ptolemaic land classification changed over time and varied depending on the type of document and the local circumstances. One tends to rely on land surveys and

agricultural reports from Fayyum villages, above all on one archive from the village of Kerkeosiris. Fortunately, there is now a larger body of documentary evidence in both Greek and Demotic Egyptian available than there was a generation ago. It still leaves many uncertainties, but a coherent picture of regional variation in the land-tenure regime is starting to emerge. Listed below are descriptions of the most important categories found in the sources. This list omits subcategories such as derelict land (*hypologos*) and other more specific designations.

Royal land (*basilikê gê*): the established view holds that a status group called the royal tenants cultivated this land under an inalienable leasehold and paid rent to the king.¹⁰ This is based heavily on the Fayyum documentation and probably misrepresents its status in the Nile Valley, where it is often more difficult to distinguish it from private land.¹¹ The early Ptolemies used royal land as a fiscal category that did not distinguish the type of land tenure.¹² However, by the middle of the second century BCE, the term private land or simply grain-producing land was often used to describe privately owned royal land in contrast to royal land that was cultivated by royal tenants.¹³ An analogous distinction between royal land cultivated by local peasants directly under the king versus royal land on which he claimed fiscal rights appears in Achaemenid and Seleucid Asia.¹⁴

Temple land (*hiera gê*): this land constituted the sacred endowment (Egyptian *ḥtp-nṯr*) of a god whose priesthood leased out or cultivated its land and used its revenue for the temple's expenses. Much as in the case of royal land, temple land was basically a fiscal category, within which land was either in private ownership or under various leaseholds of limited duration.¹⁵ In other words, in addition to temporary lease arrangements, some holders of temple land obtained hereditary rights, which they could buy or sell, amounting to virtual private ownership. Certain official documents classify temple land as land "in release" (*en aphesei*).¹⁶ Some also ascribe this status to cleruchic and private land, but the terminology is inconsistent, so the most that can be said about this category is that it apparently excluded royal land

under direct administration that was cultivated on customary leaseholds.¹⁷

Cleruchic land (*klerouchikê gê*): the Ptolemies awarded this land to soldiers as compensation for military service, so it fell under a special administrative and fiscal branch apart from royal land.¹⁸ In the third century BCE, most grants were of 100-aroura plots to cavalry settlers (*katoikoi hippeis*), while infantry and other soldiers sometimes also received plots of 20–30 arouras. Initially, they were intended only for the recipient during his lifetime, but by the end of the century a limited set of alienable rights began to emerge. From the second century BCE until the end of the Ptolemaic period, small cleruchic grants, often less than 20 arouras, were extended widely among lower-ranking soldiers and officials.¹⁹ Perhaps to distinguish them from these new cleruchs, the traditionally high-ranking soldiers with larger plots became an exclusive group called settlers (*katoikoi*) or, collectively, as the settlement (*katoikia*).²⁰ Their land, distinguished in some texts as katoikic land (*katoikikê gê*), enjoyed a special fiscal status and could be conveyed privately among members of this group.²¹

Gift estates (*doreai*): Non-hereditary grants of 10,000 arouras to officials and members of the Alexandrian elite are known almost exclusively from the Fayyum and from the mid-third century BCE.²² Though commonly included as a Ptolemaic land category, these gift estates were probably only a temporary measure introduced to facilitate the initial development of the Fayyum during the early Ptolemies' reclamation project. There may have been later grants as well, but these tended to be fiscal estates or rights to income rather than land. The term gift could designate other grants of land, including donations to temples, but it is unlikely that in these cases it was equivalent to the large third-century BCE grants in Fayyum.²³

Private land (*idioktetos gê*): This type of land could be bought and sold as well as inherited in the Ptolemaic period.²⁴ Many scholars have long held that private ownership of agricultural land in Ptolemaic Egypt was limited to gardens and orchards, so this land was merely

held on hereditary lease. Rostovtzeff, to whom this view was credited, later changed his position and identified private land with any land sold at auction, inherited, and conveyed in private contracts of sale in the Ptolemaic period.²⁵ Despite the evidence for legal rights on such land that are tantamount to private ownership, the old view is repeated even in recent scholarship. Below it is suggested that the term private land – or private royal land (*basilikê gê idioktetos*) as one text puts it – merely distinguished fiscally royal land that was in private ownership or obtained by auction from royal land that was cultivated by royal tenants.²⁶

This chapter focuses on regional differences in classification. The traditional Egyptian terminology is a poor indicator of the extent of private land rights because it concerned primarily the land's fiscal status, which was largely independent of the cultivators' tenure status in the Ptolemaic period.²⁷ However, by the second century BCE, the Ptolemaic administration distinguished royal land leased out within communities of royal tenants from privately owned royal land. With this new terminology, strong regional contrasts are observable. The term private land was used to describe land in the Nile Valley but not in the Fayyum, while communal royal land, cleruchic land, and gift estates were concentrated largely – but not exclusively – in the Fayyum. This provides one angle from which to explore the link between local environments and land rights as well as continuity and change from Ptolemaic to Roman Egypt.

The ptolemaic nile valley

The great estates of temples must have claimed a vast extent of territory in the Ptolemaic period, a legacy of the pharaohs' pious tradition of land donation, which the Ptolemies continued. Already in the New Kingdom (c. 1550–1070 BCE), surveys of land distinguish between royal estates, where peasants owed their tax revenue to the king, and temple estates, where tax revenue supported the priesthood.²⁸ The temple of Amun in Thebes stood out as

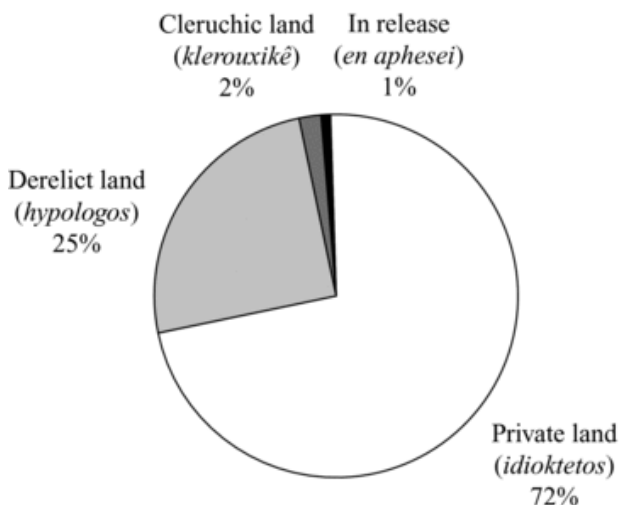
one of the largest landholding bodies in Egypt, with estates scattered up and down the Nile Valley. After the collapse of the New Kingdom the Amun temple took over the functions of an independent state. New donations or confirmations of temples' rights – often ritually represented as if they were new donations – continued under the last Egyptian pharaohs and the Persian kings as well as under the Ptolemies.²⁹ Presumably the Theban temple of Amun still drew its resources from such land in the early Ptolemaic period, when it became the seat of the rebel kingdom during the Great Theban Revolt (207–186 BCE).³⁰

During the final phase in the construction of the temple for the god Horus in Apollonopolis (Edfu) in the late Ptolemaic period, the priests inscribed a document on the temple wall. It records earlier donations and confirmations of land as well as a survey of its entire domain (*ḥtp-nṯr*), probably dating to the very beginning of Ptolemaic rule.³¹ As with other Egyptian temple estates, the land was scattered across multiple nomes, with 34 arouras in the Ombite, 1,751 arouras in the Latopolite, 2,242 arouras in the Pathyrite, and 9,182 arouras in the Apollonopolite nome, for a total of 13,209 arouras. Its share of the Apollonopolite nome was probably between 15 and 25% of the cultivable area.³² The survey often specifies the location of the temple's land by referring to the status of the land adjoining it. This provides at least one perspective on how land was classified in Upper Egypt at the outset of Ptolemaic rule. Besides the Nile and various canals, the boundaries of the temple's domain are almost always plots of land described either as the estate of some other god's temple domain or as royal land (*ḥ pr-c*).³³ In other words, a binary distinction is assumed between temple and royal land as in the New Kingdom Wilbour Papyrus from around 1147 BCE. These were fiscal categories and tell us virtually nothing about the rights of the cultivators.

The recently edited, though still unpublished, land survey from the Apollonopolite nome in the second century BCE provides a different perspective on land classification in the southern Nile Valley.³⁴ Dating to 119/118 BCE, the survey

provides a summary of the cultivation status and the taxes due for 29,402 arouras (81 km²) and was presumably based on more detailed local surveys submitted by village scribes. The beginning and the end of the papyrus are broken, and it is likely that much of the text is missing. The surviving portion deals with land in three categories. The first two categories are land “in release,” which here refers to the land of minor temples, and cleruchic land. Their total areas, 323 arouras for land in release and 658 arouras for cleruchic land, include both fertile land and land that could not be cultivated. The third and by far the largest category in the survey is entitled, “grain-producing land subject to taxation, including that used for vineyards and date palms.”³⁵ This land was subdivided into private land (*idioktetos gê*), constituting 20,593 arouras, brushwood land (*xylitis*) with 373 arouras, and ownerless land (*adespotos gê*) with just 56 arouras.³⁶ The derelict land (*hypologos*) listed immediately afterwards, amounting to 7,335 arouras, may also fall under the category of private land since the preceding area seems to be only the sown area subject to taxation. It was followed where the text breaks off with at least 62 arouras derelict brushwood land.³⁷ Figure 3.1 represents all 29,402 arouras, consolidating a few minor categories for simplicity.

Figure 3.1 Land classification in the Apollonopolite nome 119/118 BCE



The figure for land “in release” cannot have been the entire area of temple land in the nome. It was perhaps limited to land dedicated to temples (*anieromenê gê*), but it is unclear whether such land had a different status from other temple land meriting its separation.³⁸ The absence of the estate belonging to the great Horus temple is conspicuous in view of its extent in the donation text that was later inscribed on the temple wall, which also mentions other temples with landholdings in the nome that do not appear in the Greek land survey. Even within this survey, the scribe notes that a group of soldiers ceded 78 arouras of cleruchic land to the temple of Horus in Apollonopolis “for the completion of the building.” A recently published Demotic account from the wine storeroom of the temple of Horus also provides evidence for its estate in the Apollonopolite nome, from which it was able to raise the revenue for its expenses, including those related to the temple's ongoing construction project.³⁹

To establish how much land was not included in the surviving portion of the Greek land survey, one must figure out the area of the Apollonopolite nome. This can only be a rough estimate because its geographical boundaries are indicated only vaguely in a New Kingdom inscription and in the Ptolemaic donation text. Butzer reckons the nome to be

137 km² in the New Kingdom.⁴⁰ The donation text suggests that the boundaries changed slightly, leading Christensen to propose a total area in the Ptolemaic period of about 57,000 arouras (157 km²).⁴¹ On either estimate it would appear that a substantial territory is missing from the Greek land survey of the second century BCE, which fell outside of the three categories whose full areas are preserved.

One may only speculate about the area not covered in the survey. The temple land of Horus – 9,182 arouras according to the donation inscription – as well as land belonging to other local temples and temples of other nomes must have been treated elsewhere either in the same text or separately. Much of this land was privately owned, so it is also conceivable that temple land was included under the designation of private land.⁴² What all of the land in this survey has in common is the assessment of the harvest tax at rates that vary from 4 to 8 artabas per aroura. The revenue on private land from the harvest tax assessment is labeled as “rent” (*ekphorion*), so it may fall notionally under the category of royal land in its traditional Egyptian fiscal sense. However, the lack of an explicit reference to royal land is puzzling in view of its prominence in the contemporary land survey texts from the Fayyum.

Private documents from the early Ptolemaic period reveal that at least some temple and royal land was alienable in the Apollonopolite nome, so it is possible that the term private land simply replaced one or both of these older designations here. However, it seems more likely that the Ptolemies had, by the late second century BCE, introduced the term private land to distinguish between royal land cultivated by royal tenants and private land that only fiscally belonged to royal domain.⁴³ The 20,593 arouras classified as private land (*idioktetos gē*) in the Apollonopolite nome suggest that the Ptolemies recognized the reality of private land rights in Egypt, even as they continued to collect “rent” (*ekphorion*) because it was part of the royal domain. The reference to fifty-six arouras that had become ownerless land (*adespotos gē*) reinforces the impression that Greek conceptions of ownership were relevant to Egyptian land tenure.⁴⁴

The category of private land (*idioktetos gê*) was familiar to papyrologists even before the recent edition of the Apollonopolite land survey.⁴⁵ As already mentioned, Rostovtzeff in his later work identified the grain-producing land (*sitophoros gê*) that was frequently the object of sales and inheritances with this category.⁴⁶ When the first substantial group of land surveys from outside of the Fayyum was published in 1980, Brashear could show that private land was a category of land used to grow grain and taxed in grain.⁴⁷ The new Apollonopolite survey explicitly describes the private land as grain producing, confirming Brashear's suggestion. Hence the older view that private land was limited to gardens and orchards is no longer tenable.

The land surveys from the Herakleopolite nome probably date to the mid-second century BCE, so they constitute a valuable point of comparison with the Upper Egyptian Apollonopolite survey and the abundant Fayyum evidence.⁴⁸ The most promising text is a list of landholdings organized by toparchy and by village. The list includes the name of the owner, the total area, the area sown, and the amount due in kind, which varied between 2 and 5 artabas per aroura assessed only on the sown area, as well as the fixed amount due in money, which was 150 drachmas per aroura assessed on the entire area.⁴⁹ These dues suggest that the land belonged to the category liable for "grain rent" (*sitikê misthosis*) in the form of the harvest assessment (*epigraphê*) and money taxes as mentioned in other texts of the Herakleopolite nome in this period.⁵⁰ Temple land and private land are the only explicitly mentioned categories, while the cleruchic land was registered to minor officials. Royal land was also treated elsewhere, which again suggests that by the late second century BCE private land was distinguished from royal land cultivated by royal tenants, even though both belonged to the royal domain in the traditional fiscal sense, as both were assessed "rent" in grain (*sitikê misthosis* or *ekphorion*) at variable rates.

The amounts of cleruchic, temple, and private land for each village or toparchy mentioned in this land register are

extremely small, so small that it is highly unlikely that they represent the total in each village and toparchy to which they are ascribed. For many of these places, the categories are absent altogether. Moreover, since royal land was registered separately, the register does not show its extent relative to the other categories.⁵¹ The uncertain criteria for the inclusion of cleruchic, temple, and private land in this register make it doubtful whether the amounts even reflect the extent of these categories relative to each other. The sum of the cultivable area for the entries from all villages and toparchies with fully preserved data amounts to 33% temple (213 arouras), 19% private (119 arouras), and 48% cleruchic land (305.5 arouras) while the sown area is 24% temple (50.5 arouras), 36% private (75.5 arouras), and 40% cleruchic land (83.25). The relatively high cultivation rate (63%) for private land relative to temple and cleruchic land, which is the same pattern observable in the Apollonopolite survey, might suggest that the temple and cleruchic land was of marginal quality and allotted for reclamation.⁵²

The only useful figure for the area of royal land comes from another Herakleopolite text. It gives an entry of 1,043 arouras for royal land, assessed overall at 3.48 art./ar., plus 193 arouras in various royal sub-categories.⁵³ This must refer to a single village because the proportion of royal land would be extremely small if it referred to a toparchy or the whole nome. Known village sizes range from about 4,000 to 15,000 arouras.⁵⁴ Even if one assumes that this Herakleopolite village was a small one with just 4,000 arouras, then 1,236 arouras of royal land still constitute only 31% of the village. Its proportion becomes even smaller if the village was larger. This leaves considerable room for cleruchic, temple, and private land. While these proportions are uncertain, the sources from the Herakleopolite nome suffice to demonstrate that private land (*idioktetos gē*) was a distinct category from royal land.

The Herakleopolite and Apollonopolite land surveys, known since 1980 and 2002 respectively, provide a new perspective on the category of private land in the late second century BCE. This category is not mentioned in the Fayyum

land surveys, but it does appear in two royal decrees of 118 BCE. One is fragmentary but mentions the holders of “private, temple, cleruchic, and other land in release” in the context of exemptions and tax relief.⁵⁵ Another decree seems to allow certain private landowners (*idioktemones*) who obtained the status of settlers (*katoikoi*) during the recent civil war to keep that status and to be free from periodic assessment (*epigraphê*) and other tax levies (*eisphora*).⁵⁶ Whether that means the status of their land would change from private land to katoikic land is unclear. The decree also freed them from all duties (*leitourgiai*) except those pertaining to the class of settlers. Though these public duties are not specified, they may have included compulsory labor on dikes and canals or the reclamation of land.

The ptolemaic fayyum

Four features of Ptolemaic land classification in the Fayyum stand out in contrast to the Nile Valley. The first is the extensive appearance of gift estates (*doreai*) in the third century BCE.⁵⁷ Secondly, there is the high concentration of Greek soldiers settled on cleruchic land in the Fayyum. Third is the relatively large area of royal land cultivated by royal tenants on customary leaseholds. Finally, there are so far no certain attestations of private grain-producing land in the Fayyum before the Roman period, though privately owned vineyards are attested.⁵⁸ All four of these special features can be attributed in varying degrees to the early Ptolemaic policy of reclamation and development in the Fayyum. However, the paucity of private land in the Fayyum may also reflect the basic factors of ecological marginality and correspondingly low population density relative to the Nile Valley.

The king's allotment of gift-estate land was evidently devised in part as a solution for reclamation and development in the Fayyum, though gift estates are also known in other regions of Egypt.⁵⁹ Apollonios, the finance minister of Ptolemy II, possessed a 10,000-aroura estate around the Fayyum village of Philadelphia and

simultaneously another estate in the Memphite nome.⁶⁰ Thanks to an enormous number of papyri from the archive of its local manager Zenon, the workings of Apollonios's gift estate in Philadelphia are known in some detail.⁶¹ Given the latter's responsibility for the royal administration, it is not surprising to find close collaboration between Zenon and the officials in charge of supervising the massive irrigation and reclamation project in the Fayyum during the third century BCE. However, his is not the only estate in the Fayyum attested in that period with the standard size of 10,000 arouras, whose holders cooperated with royal officials on the reclamation project. Administrative correspondence concerning the royal reclamation project even circulated among these "10,000-aroura-men" (*myriarouroi*), addressing them as though they were officials themselves.⁶² Some cleruchs were even assigned plots within gift estates, which underscores the extent to which gift-estate holders acted as functionaries of the state subordinate to the king.⁶³

The recipients were typically members of the Alexandrian elite, to whom the king ceded the rights to revenue from the land to encourage them to develop it.⁶⁴ It would revert to royal land upon their death or whenever the king wanted to confiscate it. Within the territory of the estates, the appointed managers assumed most of the functions that royal officials exercised elsewhere.⁶⁵ They leased out land to individuals and sometimes even to groups of peasants with their own body of elders who apportioned the land among themselves.⁶⁶ The abundance of land available for development relative to the agricultural workforce, particularly in the early Ptolemaic Fayyum, would have made it easier for the king to exercise his right to grant and revoke allotments for his followers than would have been the case in the more densely populated Nile Valley. While the connection between gift estates and the early Ptolemaic reclamation project in the Fayyum is unmistakable, it is conceivable that some Ptolemaic gift-estate grants were composed of already productive land intended to reward loyal elites.

There are few attestations of landed gift estates after the

end of the third-century BCE, and they may not refer to the same phenomenon as in the early Ptolemaic Fayyum.⁶⁷ The term gift (*dorea*) by no means denoted only landed estates in Ptolemaic Egypt but could also refer to the rights to particular tax revenues and miscellaneous benefactions just as in other Hellenistic kingdoms and in Greek descriptions of earlier Egyptian and Persian practice.⁶⁸ Some scholars suppose that fiscal gift estates were part of a new policy, introduced by Ptolemy III and continued until the reign of Ptolemy VIII Euergetes II, which replaced landed gift estates.⁶⁹ The commander Galaistes, who led an army in Syria under Ptolemy VI, had his gift estate – whether fiscal or landed is unclear – confiscated after the accession of Ptolemy VIII, as the mercenary soldiers revolted and Galaistes fled to Greece.⁷⁰ The wife of one of Galaistes' subordinates petitioned the finance minister for the return of her husband's confiscated gift estate, so that she and her children could cultivate it. The desperate tone and the prospect of her and her children cultivating the land make it unlikely that what was at stake in this petition resembled a 10,000-aroura estate of the early Ptolemaic period.⁷¹ Besides these doubtful examples, there were apparently no landed gift estates after the third century BCE.⁷²

The settlement of soldiers on the land in the Arsinoite nome helped promote land reclamation in this region. Cleruchs were also settled in the Nile Valley, being attested especially in the Herakleopolite and Oxyrhynchite nomes, but because most came to the Fayyum they merit discussion here.⁷³ In a third-century BCE Arsinoite tax register, Clarysse and Thompson identify 3,472 adult males and 3,147 adult females (= 6,619 adults) with the status designation cavalry settlers (*katoikoi hippeis*).⁷⁴ They and their families represented about 11% of the Fayyum's population. Cavalry settlers received land grants of 100 arouras in this period. However, the status of the head of household applied for fiscal purposes to all adult members of the household including slaves, so the actual number of cavalry settlers was lower. According to contemporary tax registers, the average Greek household had 3.3 adults but the average household of cavalry settlers had 6.2 adults.⁷⁵ If the latter figure is

correct, the number of cavalry settlers with 100-aroura estates was 1,068.

Thus probably about 106,800 arouras (294 km²) in the Fayyum were occupied by these cavalry settlers, which is roughly 20–25% of the entire cultivable area.⁷⁶ One also has to reckon with infantry and other cleruchs who received smaller plots of thirty, twenty-five, or twenty arouras each in the mid-third century BCE. If these were overall less numerous than cavalry settlers, as Clarysse and Thompson suggest, then they could not add more than 32,040 arouras (88 km²) or an additional 6–7% of the land.⁷⁷ These figures suggest that in total as much as 30% of the Arsinoite nome was classified as cleruchic land at that time.

In the third century BCE cleruchic grants were generally non-hereditary and non-transferable. Its marginality and the high land-to-labor ratio overall in the Fayyum must have made it easier for the king to confiscate and redistribute cleruchic land. Already by the end of the third century BCE some cleruchs are seen using their plots as security for loans. In the second century BCE, new cleruchic allotments became much smaller and often soldiers did not receive the full area that their rank entitled them to.⁷⁸ Conceivably, vacant land fit for reclamation was increasingly hard to find, and the productive land was becoming more densely settled.⁷⁹ During this period, some possessors of cleruchic allotments exercised more exclusive land rights, enabling male children to inherit the land from their fathers and cleruchs to alienate the land among themselves by contracts of cession as long as it remained within a defined military status group.⁸⁰

While references to cleruchic land in the Fayyum are abundant, few sources permit a quantitative evaluation of its extent in relation to other land types. The most promising source from the third century BCE is an extensive Demotic land survey datable to about 240 BCE and written by the village scribe of Tanis, located on the eastern edge of the Fayyum just south of Philadelphia in the Herakleides district.⁸¹ The main text is a survey of the holdings, crops, and rents of Egyptian peasants, undoubtedly royal tenants, working the royal land under customary communal

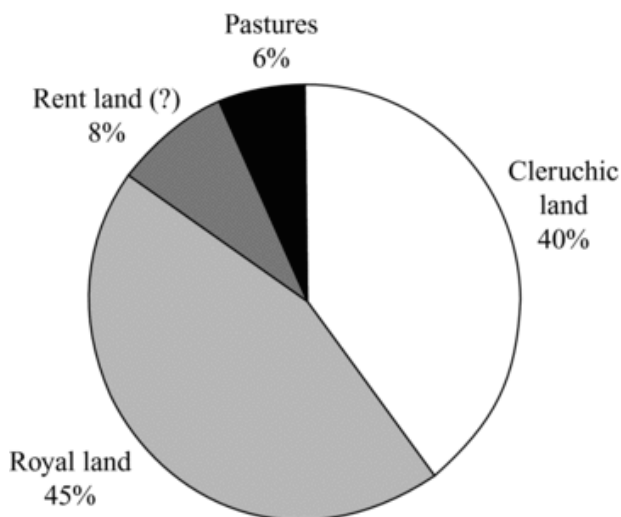
institutions of leasehold managed by village elders.⁸² On the back of the papyrus, an incomplete topographical survey of the village gives the exact dimensions of individual landholdings. Greek cavalymen with 100-aroura plots occupy most of the land in this part of the survey. Among them, neighboring fields are explicitly labeled as royal land (*ἡ πρ-ε*).

A smaller papyrus belonging to the same land survey and written by the same village scribe contains a brief summary of the crops and taxes both for the land belonging to royal tenants listed on the other papyrus and for the cleruchic land in the village.⁸³ It reports a total of thirteen “100-aroura men” (*ε.ω-ν-100*) with 1,300 arouras. A second group of cleruchs with smaller allotments, probably infantrymen, appears in a badly preserved line.⁸⁴ The context allows only one reading of the traces, which means that the group comprised just four thirty-aroura cleruchs, who together possessed 120 arouras. That makes the total cleruchic land in the village roughly 1,420 arouras. The total amount of royal land in the village, 2,184 arouras, is summarized both here and more thoroughly in the first columns on the front of the larger papyrus.

The title of the part of the survey dealing with royal land is “the registration of the men who lease in the village and the cultivators.”⁸⁵ Given the manner of assessing rents and the details of tenure described later in the text, there is little doubt that it concerns royal land even though this term appears only in the topographical survey on the back. The total 2,183 arouras are classified into various subcategories according to the rate of the rent in kind. The first and largest subcategory has no title and consists of land assessed at three different rates, $6\frac{3}{4}$, $5\frac{3}{4}$, and $2\frac{1}{2}$ artabas/aroura for a total of 1,615 arouras. The second subcategory, with 313 arouras at the rate of $4\frac{1}{2}$ artabas/aroura, is mysteriously labeled with a Demotic word (*šmw*) that means rent in private lease contracts but is equivalent to the Greek word for the harvest tax (*epigraphê*) on private land in taxation receipts and registers from the Nile Valley.⁸⁶ In view of its unique appearance here, it does not seem safe to conclude

anything about the tenure arrangements based on this fiscal category.⁸⁷ The third subcategory is mostly pasture with 225 arouras assessed at various rates, which is followed by another 30 unnamed arouras. Figure 3.2 depicts these subcategories together with the approximate total of cleruchic land. The extent of the cleruchic and royal land in the mid-third century BCE is comparable with similar figures from Kerkeosiris in the late second century BCE, discussed below. The area of temple land is unknown because it is not mentioned in this text.

Figure 3.2 Land classification in Tanis, 240/239 BCE

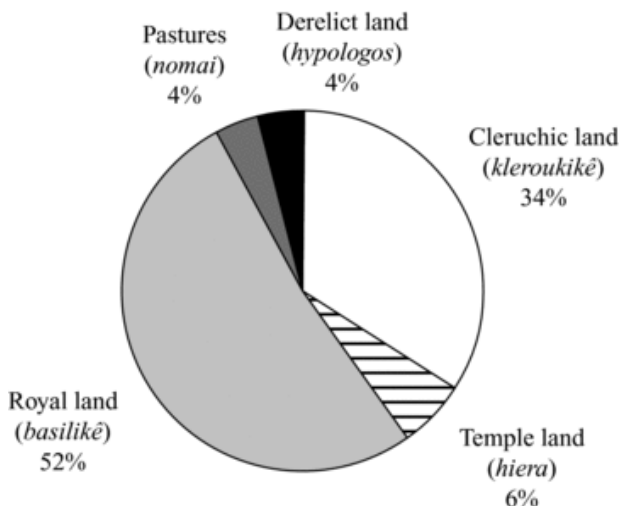


The Fayyum village of Kerkeosiris furnishes the most complete information about land classification in Ptolemaic Egypt. Thanks to its reuse for encasing mummified crocodiles, the archive of the village scribe of Kerkeosiris is preserved, containing numerous official documents that help us understand the land tenure and fiscal regime in this Fayyum village for roughly the years 120–110 BCE.⁸⁸ Menches, the village scribe, was responsible for conducting an annual survey of land by crops, persons, and fields, and he was in charge of the agricultural and fiscal administration at the village level.⁸⁹ A full overview of the land according

to its classification is available for the year 119/118 BCE, according to which the total territory was 4,700 arouras (12.95 km²) or 4,630.5 (12.76 km²), excluding territory of the inhabited village itself. This land was divided into six categories, of which un-rented pastures (*nomai*), gardens and orchards (*paradeisoi*), and derelict land (*hypologos*) were merely subcategories of royal land. Hence there were just three general categories: cleruchic land with 1,565 arouras, temple land with 272 arouras, and royal land with 2,794 arouras. By contrast, private land does not appear as a category in Kerkeosiris.

There are strong similarities between the land in the village of Kerkeosiris in the late second century BCE and land surveyed in the village of Tanis in the mid-third century BCE. The earlier land survey records 2,184 arouras of royal land and 1,420 arouras of cleruchic land, while the Kerkeosiris figures are 2,794 arouras of royal land and 1,565 arouras of cleruchic land. The absence of temple land in the third-century-BCE text from Tanis is puzzling. Presumably it was registered elsewhere. If the missing proportion of temple land in Tanis resembled that of Kerkeosiris then [Figures 3.2](#) and [3.3](#) would look nearly identical. On the other hand, it is conceivable that Tanis did not have any temple land because it was a royal settlement on newly reclaimed land. The correspondence would seem to reinforce the impression from other Ptolemaic sources that royal and cleruchic land were the predominant classifications in the Fayyum, temple land was relatively limited, and private land was generally absent.

Figure 3.3 Land classification in Kerkeosiris, 119/118 BCE



A comparison of these village surveys from the Arsinoite nome with the survey of the Apollonopolite nome ([Figure 3.1](#)) illustrates a stark contrast between the Fayyum and the Nile Valley in the Ptolemaic period. On the other hand, it is dangerous to generalize from this limited evidence. The Herakleopolite land registers provide tantalizing clues that might fill in the picture, but there are still too many unknowns. It is not even clear whether one should expect the classification of land in the Herakleopolite to resemble the Apollonopolite nome more than the Arsinoite nome. According to modern data discussed in the last chapter, the Herakleopolite ranked low compared to other areas in the Nile Valley in terms of population density and the extent of marginal land. It was, however, not as low as the Delta and the Fayyum, which constituted hydrological dead-ends with greater challenges of irrigation and drainage. Its institutions might be expected to mirror its geographical position by having characteristics of both the Fayyum and the Nile Valley. It is suggestive that the Ptolemaic administration did classify some land in the Herakleopolite as private land and that the extent of royal land there has probably been exaggerated in the previous literature.

Roman land classification

In the Roman period there are enough data to draw firmer conclusions about regional differences in the proportion of public to private land. Similarly to Ptolemaic Egypt, Roman ideology and legal categories normatively described all land in the provinces outside Italy as the property of the Senate and the Roman people and therefore subject to direct taxation. In other words, only the Italian land of Roman citizens, which after 167 BCE was generally exempt from taxation, was full private property in the strict Roman sense. This general claim to overarching ownership may have provided a legal justification for taxation but in practice the Romans recognized that provincials had legitimate property rights on what could be classified as private land (Latin *ager privatus*).⁹⁰ In Egyptian administrative texts from the Roman period private land (*idiotikê gê*) was sometimes contrasted with public land (*demosia gê*). While other land categories in Roman Egypt retained a variety of designations, they tend to fall within one of these two categories.

Public land (*demosia gê*): This term, which the Roman administration introduced, was basically equivalent to royal land (*basilikê gê*) and was sometimes used interchangeably with it.⁹¹ A few texts actually distinguish them, perhaps because public land included not only the former Ptolemaic royal land but also land that the Roman state acquired through subsequent confiscations. By contrast, the status designation public cultivators (*demosioi georgoi*) completely replaced the Ptolemaic term royal cultivators (*basilikoi georgoi*) for the tenants of such land. Continuity of land tenure and fiscal institutions on public or royal land from the Ptolemaic to the Roman period is widely accepted.⁹²

Imperial estates (*ousiakê gê*): in the Julio-Claudian period, the emperors granted members of their families or loyal supporters estates (*ousiai*) in Egypt.⁹³ The term itself simply denotes property and some estates may have been acquired by purchase, making them equivalent to private land. Nevertheless, temporary grants from the emperor, often managed by freedmen, once again became imperial estates when they were confiscated or the recipient died.⁹⁴ These imperial estates were usually auctioned to large

leaseholders, entitling them to a share of their revenue, but abuses led to reforms starting in 69 CE.⁹⁵ Imperial estates were then merged into the administration of public land and leased to the same peasant communities. Though effectively equivalent to public land, they were still designated as *ousiac* land because the revenue after 69 CE was allocated to a separate account (the so-called *ousiakos logos*) of the imperial treasury.

Temple land (*hiera gê*): the established view holds that temple land was confiscated and turned into public land during the reign of Augustus.⁹⁶ In this section and more thoroughly in [Chapter 4](#), it is argued that the Augustan reforms merely removed the land from the temples' administrative control. For the most part, it meant a privatization of temple land because individuals who already had alienable use rights were treated from a fiscal and legal perspective as private landowners. Those parts of temple domains without private claimants that were cultivated or leased out by the priesthood collectively were henceforth classified as public land and placed under the administration of state officials.⁹⁷

Katoikic land (*katoikikê gê*): as described above, in the late Ptolemaic period this term designated cleruchic land that belonged to so-called settlers (*katoikoi*), an exclusive status group of soldiers given land allotments. From the beginning of the Roman period, it seems to have become fully private property that could be alienated even to people not belonging to this group. On the other hand, certain peculiarities about this category persisted into the Roman period. Ownership of katoikic land continued to be recorded in a special register (*katalochismos*) in the public archives, carried over from the Ptolemaic katoikic administration.⁹⁸ Conveyances of katoikic land still took the form of cession contracts just as in the Ptolemaic period, implying the lack of full ownership.⁹⁹ While most scholars assume this was a legal fiction, it has been suggested that ownership of katoikic land remained limited by status.¹⁰⁰ The term cleruchic land also survives into the Roman period as a synonym for private land and the term cleruchs for private

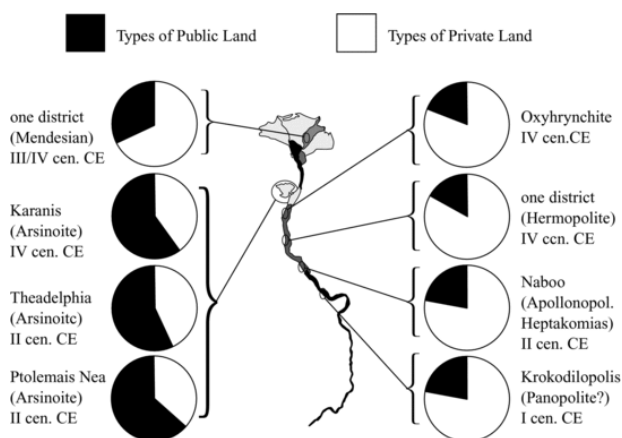
landowners.¹⁰¹ A new text shows that katoikic land could also be a general category for land charged one artaba per aroura, under which private land, katoikic land (in a narrower sense), and land purchased from the state were organized, in contrast to land subject to variable rents or taxes. This probably explains the phrase “land bought into the *katoikia*” as an assimilation to the fiscal status of katoikic land.¹⁰² Thus one probably has to distinguish between fiscally katoikic land from the historically katoikic land that was carried over from the Ptolemaic period.

Private land (*idiotikê gê*): the Roman administration adopted this term as an overarching category of private land in opposition to public land, corresponding to the Latin distinction between private and public land (*ager privatus* and *ager publicus*).¹⁰³ Hence it included katoikic land as well as land sold to individuals by the state. In light of the evidence discussed in this and the next chapter, Ptolemaic private land (*idioktetos gê*) as well as temple land effectively in private ownership must have constituted a far larger share of the private land in Roman Egypt than has previously been realized.¹⁰⁴ The fundamental difference lies in how the Romans taxed private land. It was assimilated to the fiscal status of katoikic land, which means that it was assessed a fixed rate, usually one artaba per aroura, in contrast to the variable rents charged on public land.

There were subtle changes in the land designations after the Roman conquest, but it is probably fruitless to search here for nuanced legal distinctions. The tendency was to substitute public (*demosia*) for royal (*basilikê*), private (*idiotikê*) for privately owned (*idioktetos*), and priestly (*hiereutikê*) or sacred (*hieratikê*) for its synonym (*hiera*), which designates temple land. These adjectives tend to modify the neuter plural word for land (*edaphê*) instead of the feminine singular word (*gê*), which was more common in the Ptolemaic period. The new terminology was never systematically applied, as Ptolemaic terms were frequently interchangeable in the Roman period without necessarily causing any legal misunderstanding. There continued to be differences in Egyptian land tenure between the Fayyum and

the Nile Valley that are not reflected in the Roman classification. Nevertheless, the Roman distinction between private and public land types in official surveys and tax registers at least provides one crude quantitative measure for regional differences in the level of privatization.¹⁰⁵ Figure 3.4 presents the results of the analysis of data from eight separate areas throughout Egypt, including villages, districts of multiple villages, and nomes.¹⁰⁶ It reveals a close fit between private land rights and the regional differences in population density identified in the previous chapter. The rest of this section is devoted to showing how local categorizations of land by officials in Roman Egypt yield these simplified results.

Figure 3.4 Proportion of public and private land in Roman Egypt



The roman nile valley

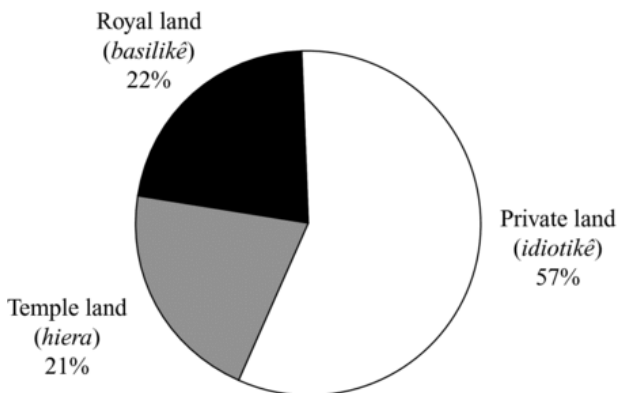
It is convenient to begin with the Nile Valley because it includes the earliest data from the Roman period. One important land survey dates to the year 47 CE and comes from a village named Krokodilopolis located in Upper Egypt.¹⁰⁷ It should not be confused with the Arsinoite metropolis, which was called Krokodilopolis in the Ptolemaic period, nor with the Krokodilopolis of the Pathyrite nome. Information in the text points to a place

near the Greek polis of Ptolemais, which was founded by Ptolemy I Soter in the Thinite nome. Wilcken and Plaumann note the preponderance of Greek names in the land survey and, more convincingly, the reference to land dedicated to the god Soter as well as land registered to the “magistrates (*archontes*) of the polis through their presiding officials (*prytaneis*).”¹⁰⁸ Ptolemaeus the geographer writing in the second century CE mentions a place called Krokodilopolis near Panopolis, which is mentioned as the hometown of a cultivator in the papyrus.¹⁰⁹ Earlier scholars identified this Krokodilopolis with a village close to Athribis, near the border with the Thinite nome, where the city of Ptolemais was located.¹¹⁰ Such a location on the edge of the cultivation away from the river, west of modern Sohag, is consistent with the fact that all of the land in this survey is highland (*epeiros*), as opposed to the so-called island land (*nesos*). The latter was, according to the most likely interpretation, any strip of land close to the Nile and surrounded at least partially for some time during the year with water so as to resemble an island.¹¹¹

The text's introduction states that the village scribe of Krokodilopolis and adjacent villages made the report both by person (*kat' andra*) and by type of registration (*kat' eidos somatismou*) for royal land, temple land, and private land that was flooded in the particular year.¹¹² This distinction between lists organized by person and by type of registration corresponds precisely to the two surviving portions of the land survey (604 A and 604 B). In the first part, 168 entries are preserved, each containing the name of the landholder, including joint holders, and the area of land in each category. Royal land is the only category designated by name, while the others are designated, with a few doubtful exceptions, by their tax rate. The result after totaling the surviving figures is that 22% (889 arouras) was classified as royal land, 21% (853 arouras) as land charged at $\frac{3}{4}$ artaba per aroura, 56% (2,233 arouras) at one artaba per aroura, and 1% at either $\frac{1}{2}$ artaba or two artabas per aroura. [Figure 3.5](#) represents these figures. The land assessed at one artaba and two artabas per aroura was classified as private land, while the $\frac{3}{4}$ -artaba land is probably to be identified with

temple land since this is the third category mentioned in the text's introductory paragraph.

Figure 3.5 Land classification in Krokodilopolis, 47 CE



The identification of the rates with the land categories is based on the second part of the survey (604 B), where the same individuals are listed under separate headings for each type of land registration.¹¹³ The beginning of the text is lost, but where the extant text begins it is clear that royal land is being listed and, within this category, various sub-headings for holders with different statuses or types of royal land and for changes in the amount of royal land registered to individuals from the previous survey. This section concludes with a summation of the royal land. A new section is labeled private land (*idiotika* [*edaphê*]), under which there are subheadings for each tax rate, including two-artaba land and one-artaba land.¹¹⁴ Some of these landholders can be identified in the other list with the same amounts of land, which demonstrates that one-artaba land and two-artaba land belonged to the category of private land.¹¹⁵

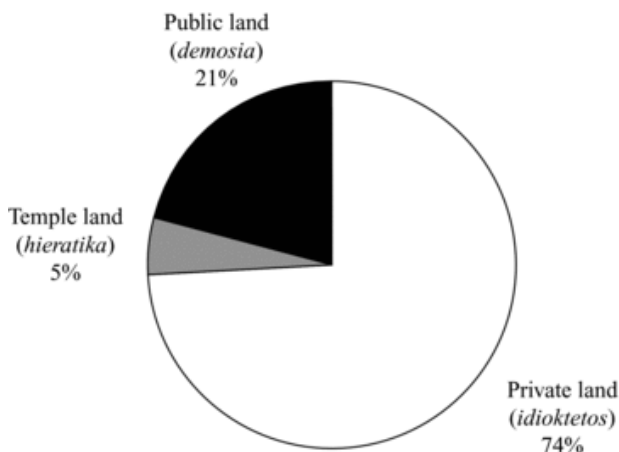
The text breaks off before $\frac{3}{4}$ -artaba land is mentioned, but, given the title of the document, there can be little doubt that it was temple land.¹¹⁶ Whether the small amount of $\frac{1}{2}$ -artaba land belonged to this category or to private land is less certain. These fixed rates are within the typical variation in the rate of the one-artaba tax, which implies that it was

treated from a fiscal point of view as private rather than public land, which paid variable rents.¹¹⁷ It also suggests that temple land could have had an even more privileged fiscal status than private land. In the next chapter it is argued that this land was also legally equivalent to private land in the Roman period, just as in the Ptolemaic period many holders of temple land possessed rights of inheritance and conveyance. Temple land probably retained its designation and was separated from other private land in the official land and tax registers because its revenue was allocated to a special account.

The next village in the Nile Valley for which there are comparable data about the extent of each land category is Naboo in the Apollonopolite Heptakomias nome of Middle Egypt. Two reports by the village scribe of Naboo, one dating to the year 118 CE, provide outstanding insight into the fluidity of Roman land classification. One contains summary information about land categories in the entire village. The survey distinguishes land depending on whether it was highland (*epeiros*) or island land (*nesos*).¹¹⁸ The second one is for a single basin (*perichoma*) within the village, from roughly the same period, c. 113–120 CE.¹¹⁹

Figure 3.6 depicts the extent of land by category for the entire village. Out of 4,915 arouras on the highland under these two fiscal categories, public land constitutes 21% (1,017 arouras), privately owned royal land 13% (658 arouras), cleruchic land 61% (2,980 arouras), and temple land 5% (259 arouras). Within the 1,017 arouras of public land (*demosia gê*), 1,016 arouras were subcategorized as royal land (*basilikê gê*), while the remaining one aroura was derelict. It illustrates that these categories were virtually identical, at least as they were used in Naboo. Unlike the private land categories, public land was assessed variable rents. A small area of temple land in Naboo was also assessed a variable rent (*ekphorion*), making it equivalent to royal land from a fiscal perspective. However, the missing lines in column four probably report on the area of temple land being charged fixed land taxes (*kathekonta*), which would imply that it was privately owned temple land.¹²⁰

Figure 3.6 Land classification in Naboo, 118 CE



The figures for the single basin within the village given in the other papyrus reveal roughly the same percentage of land but use slightly different terms. Out of a total 668 arouras, 33% was royal (222 arouras), 63% was private, including private royal land and cleruchic land (422 arouras), and 4% was temple land (24 arouras). Just as in the register for the whole village, temple land is listed under a separate heading (*hieratika* [*edaphê*]) from land under the regular fiscal administration (*dioikesis*). The revenue from this land, which was no longer under the direct control of the temples as in the Ptolemaic period, had to be counted separately for the state to provide temples with their subvention (*syntaxis*). A similar method of accounting was used elsewhere in Roman Egypt for money taxes due to the temple but collected by the state.¹²¹

Comparison of the two reports referring to the same land shows that “royal land with private legal equivalence” (*basilikê gê idiotikôi dikaiôi*) and cleruchic land (*klerouchikê gê*) were actually subcategories of private land (*idioktetos gê*) in Naboo.¹²² As for cleruchic land, it seems unlikely that so much of a village outside the Fayyum had been occupied by Ptolemaic soldiers. More probably, the term cleruchic land was used here as a synonym for private land.¹²³ Its usage is

similar to another Roman tax register, where all private landowners are called cleruchs (*klerouchoi*) in the opposition to the cultivators of public land (*demosioi georgoi*).¹²⁴ Other Roman-period texts made a distinction between “collectors of grain dues from settlers” (*praktores sitikôn dia katoikôn*), that is, the fixed taxes assessed on private land, and “collectors of grain dues from public cultivators” (*praktores sitikôn dia demosîôn georgôn*), that is, the variable rents on public land. Here too “settlers” (*katoikoi*) probably refers to all private landowners.¹²⁵ Nevertheless, the extension of the term cleruchic to private land or of cleruchs and settlers to private landowners in the Roman period was not consistent.

Though outside the general chronological scope of this study, a few later texts from other places in the Nile Valley provide further evidence for regional patterns in land tenure. One text dating to the mid-fourth century CE provides aggregate figures of land classifications for the entire Oxyrhynchite nome in the Nile Valley.¹²⁶ It indicates that just 19% (38,857 arouras) was public land (*demosia gê*) while the remaining 71% (163,687 arouras) was private land (*idiotikê gê*). This is comparable to the information from one toparchy of the Hermopolite nome in the early fourth century CE. According to this text, 17% (2,486 arouras) was public and 73% (12,557 arouras) private.¹²⁷ The more extensive fourth-century CE land surveys are also interesting, but the mere 12% public land recorded there undoubtedly reflects the bias that only urban metropolitan landowners are listed, who are more likely to have held private than public land.¹²⁸

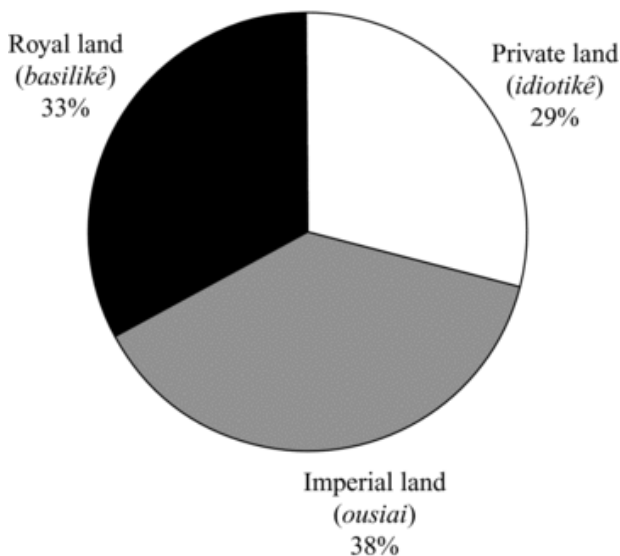
Though these texts are later than the land registers from Krokodilopolis and Naboo, the categories mentioned here may reflect earlier conditions. By the early fourth century all public land had become effectively private in Egypt even though it continued to be assessed higher taxes.¹²⁹ There may have been a gradual tendency toward the *de facto* privatization of public land.¹³⁰ There is not enough evidence, however, to support the hypothesis that the area of public land declined in quantitative terms in the course of the first three centuries CE. Reclassifying it as private land

would represent a change in its fiscal as well as its legal status. As Rowlandson points out, the proportion of public to private land in the fourth century Oxyrhynchite nome is consistent with the earlier evidence for regional differences between the Fayyum and the Nile Valley.¹³¹

The roman fayyum and delta

A cluster of villages not far from Karanis in the northeast Fayyum is recorded in a long text about the cultivation and taxation of land in 166/167 CE.¹³² The author of the report is the village scribe of Hieria Nesos and the surrounding villages. After Hieria Nesos with 4,062 arouras, the largest is Ptolemais Nea with 3,924 arouras of arable land.¹³³ Figure 3.7 gives the aggregate distribution of land by category in these two villages as well as the surrounding hamlets and marshes. The category of private land (*idiotikê gê*) is used in this survey in a wide sense that undoubtedly encompasses what continued in other contexts to be called cleruchic or katoikic land. The category of revenue land (*prosodika edaphê*) is found here almost exclusively in Ptolemais Nea. The most likely interpretation is that it refers to land belonging to cultivators of royal land in arrears for rent and hence liable to extraordinary rates.¹³⁴ What seems certain is that the land in question was some type of public/royal land, so it is grouped in the chart together with royal land.

Figure 3.7 Land classification in Hieria Nesos and nearby villages, 166/167 CE

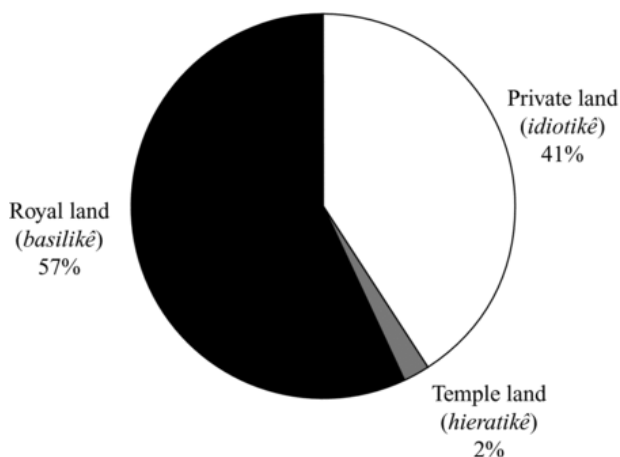


Imperial estates (*ousiai*) constituted a large proportion of the land in these villages, which was apparently the case throughout the Fayyum. The names of the original beneficiaries continued to designate these estates. What is important for the present purpose is that such land is hardly distinguishable from public land after the first century CE. The cultivators were often the same as those who cultivated public land. Both emphasized their status, some even referring to themselves collectively as “public and imperial-estate cultivators” (*demosioi kai ousiakoi georgoi*), indicating that they constituted a single group. It was a group, as the next chapter will show, with village elders and community institutions governing land rights. Hence imperial land should be regarded as one type of public land.

The other village for which there is quantifiable evidence for land classifications is Theadelphia in the northwest Fayyum. One text assesses the state's revenue derived from land in the village according to its status.¹³⁵ The basic dichotomy in the list is between land cultivated by public cultivators (*demosioi georgoi*) and land cultivated by cleruchs (*klerouchoi*).¹³⁶ As one would expect, public tenants cultivated primarily public or royal land. However, most of

what these so-called cleruchs cultivated is termed private land (*idiotika edaphê*). This recalls what was observed in the land registers from Naboo in the Nile Valley, where two separate texts refer to the same land interchangeably as private and cleruchic. [Figure 3.8](#) presents the classification of land by area in Theadelphia.

Figure 3.8 Land classification in Theadelphia, 158/159 CE



The category of temple land is actually divided here into two parts: first, temple land cultivated by public tenants subject to variable rents, that is, public temple land; and second, temple land cultivated by “cleruchs” paying the fixed one-artaba tax, that is, private temple land. Thus in total about 57% of the village was some type of public land and 43% private land. However, the categorization in this text appears to omit imperial estates. Estimates of the extent of imperial estates in Theadelphia in this period range from 600 to 1,000 arouras.¹³⁷ If one groups this together with other public land, then the total rises to about 63% public land. The distinction that officials made between temple land under rents (*ekphoria*) and temple land under fixed taxes (*kathekonta*) is noteworthy. The discussion of these taxes is reserved for [Chapter 5](#), but it has already been mentioned that fixed taxes became the regular fiscal regime for private land in Roman Egypt. This text confirms the

impression from the registers from Krokodilopolis and Naboo in the Nile Valley that temple land charged fixed taxes was privately owned in the Roman period. It supports the argument that the alienable tenure rights on temple land observable in the Ptolemaic period were protected under Roman rule.¹³⁸

Later evidence once again provides relevant information about land classification that may still reflect conditions in the early Roman period. There is fourth-century CE evidence from the village of Karanis in the northeast Fayyum that shows a stark contrast with the Oxyrhynchite and Hermopolite data of the same period. The land was divided into the two simple categories, public and private, that differed by that time only in their rate of taxation but which most probably reflect earlier differences in land tenure. Since the relevant texts, datable to around 310 CE, are tax lists rather than land surveys, the holdings of public and private land have to be deduced from the amounts that individuals pay in taxes.¹³⁹ In total, out of 4,271 arouras in the village of Karanis, an estimated 53% (2,252 arouras) was public and 47% (2,020 arouras) private land.¹⁴⁰

The Mendesian nome is the only area from the Delta that has left comparable evidence for the proportion of public and private land. The most relevant text is a land survey of the Phernouphite toparchy encompassing multiple villages in the Mendesian nome. It dates to about 297–308 CE, so it is likewise from a later period but may still reflect the general proportion that obtained in early Roman Egypt when differences in land tenure on public and private land were more pronounced.¹⁴¹ Out of 11,254 arouras mentioned in the text, 69% were private and 31% royal land. This is a higher proportion of public land than is attested in any of the sources from the Nile Valley, but it is still low by comparison with the Fayyum. One would like to have similar sources from other Delta villages. As the previous chapter pointed out, parts of the Delta were extremely fertile, particularly as one moved closer to its apex. The area corresponding to the ancient Mendesian nome was somewhat denser than the Fayyum and other parts of the

northern Delta in modern Egypt. Though it is not inconsistent with the model, one would not want to generalize about the whole Delta from this single piece of evidence. Blouin's recent studies of the Mendesian nome in the Roman period seem to confirm that less intensive forms of land use and an abundance of marginal, marshy land characterized the region in antiquity.¹⁴²

Conclusion

The quantitative data on land categories derived from land surveys and taxation lists support the conclusion that there was a persistent regional pattern to land tenure. What these sources also reveal is how layered and ambiguous the official terminology for land tenure could be, especially in the Ptolemaic period. The traditional categories of royal and temple land that the Ptolemies inherited reflect an administrative and, more importantly, fiscal distinction, specifying whether the king or the priesthood claimed its revenue. The use of the term private land (*idioktetos gē*) suggests that the Ptolemies already recognized that land tenure within these domains often amounted to ownership in the Greek sense, even if they maintained the collection of rents (*ekphoria*) that the broader Egyptian conception of royal land entailed.

The Roman land registers provide a less ambiguous representation of the legal rights of landholders. The categories of land paying fixed taxes (*kathekonta*) and those paying variable rents (*ekphoria*) can be used as one measure of the regional variation in the extent of private ownership. The significance of the Roman fiscal terminology for understanding land tenure stems from the fact the administration discriminated between those without exclusive rights – the so-called royal or public tenants – and those with exclusive rights, privileging the latter with a more favorable fiscal regime. The distinction may also have constituted a legal basis for subsequent innovations in land registration and conveyance discussed in the next chapter, which expanded and enhanced private ownership. The

privatization of land is most evident in the transformation of Ptolemaic cleruchic land into fully alienable private property under Roman rule. However, it was no innovation for the Romans to classify as private land what the Ptolemies had already called private land (*idioktetos gē*). To judge by the second-century-BCE land survey of the Apollonopolite nome discussed above and the Ptolemaic land sales analyzed in the next chapter, this category was already quite extensive in the Nile Valley.

The regional differences between the Fayyum and the Nile Valley illustrate the correlation between privatization and land scarcity, which the Boserup-Demsetz model predicts. Admittedly, increasing economic investment could induce artificial scarcities by raising the value of land while a fuller bundle of property rights could encourage such investment, so the causation is not unilinear. However, it would be a mistake to ignore the impact of ecological factors on the demand for property rights. One is tempted to infer an overall population density in Roman Egypt that is higher than in Ptolemaic Egypt from conditions generally favorable to economic development such as internal peace, secure property rights, and low fixed taxation, but the ancient sources are insufficient to establish this. It would be consistent with other phenomena such as the putative increase in the sale of public land to private owners and the gradual legal assimilation of public and private land. Unfortunately, this kind of diachronic analysis of how these variables relate is impossible for the Ptolemaic and Roman period, so the geographical analysis must serve as a proxy. Differences between the Fayyum and the Nile Valley are firmly grounded in the evidence, lending support to the model.

¹ See [Chapter 1](#), p. 20.

² Rostovtzeff (1910: 29); similarly, Manning (2005: 179).

³ Préaux (1939: 436–80); cf. Rathbone (2000: 49–50).

⁴ *Contra* Rowlandson (1985: 329–30).

⁵ Shelton (1976: 119–23); Rowlandson (2003).

⁶ Rowlandson (1985: 331–36; 2006: 181–7).

- ⁷ Monson (2007d: 390–2).
- ⁸ Manning (1995: 247–8; 2003: 194–5); Hohfeld (1964 [1920]) introduced the notion of property as a “bundle” of rights and obligations embedded in social relations, which is standard in Anglo-American legal studies: e.g. Stoebeck and Whitman (2000: 1–7); cf. Stephanias (2005).
- ⁹ Diodorus Siculus 1.73–4.
- ¹⁰ Wilcken (1912: 272–8).
- ¹¹ Rostovtzeff (1910: 25–30) in his early work distinguished two types of royal land, long-term hereditary lease, with which he described the tenure of land purchased at royal auctions as well as land conveyed in Demotic sale contracts (25–28), and royal land that was under direct royal administration (29); he rightly points out a regional difference between the Fayyum and the Thebaid (29); cf. Wilcken (1912: 285).
- ¹² Manning (2003: 81).
- ¹³ The designation “private royal land” (*basilikê gê idioktetos*), attested in P. Lond. VII 2188 (148 BCE; Hermonthis), lines 209, 335 (with the editor's note, p. 295), is surely equivalent to private land (*idioktetos gê*) and merely resolves royal land's ambiguity by acknowledging private rights despite royal claims to rent. The usage is comparable to the term “public priestly land” (*demosia gê hiereutikê*) or its variant (*basilikê gê hiereutikê*) in the Roman period, which acknowledges the priesthood's rights to allocate the land as part of the temple endowment despite the government's claims to rent as if it were public land; see below, [Chapter 4](#), pp. 136–7.
- ¹⁴ Aperghis (2004: 88–9).
- ¹⁵ Pestman (1969a: 146–8) suggests a correspondence between these different land rights and the various terms for temple land in the Pathyrite; cf. P. Lond. VII 2188 (148 BCE; Hermonthis), lines 35–8, 287–9 with the editor's note, p. 288.
- ¹⁶ P. Tebt. I 5 (118 BCE; Kerkeosiris), line 110 (restored) and P. Tebt. I 63 (116/115 BCE; Kerkeosiris), line 2, but cf. UPZ I 110 (164 BCE; Memphis?), lines 177–8, which

seems to exclude temple land.

- ¹⁷ E.g. P. Tebt. III.1 705 (209 BCE; Tebtunis), line 7; P. Par. 63 = UPZ I 110 (164 BCE; Memphis?), lines 177–8; P. Tebt. I 5 (118 BCE; Kerkeosiris), line 37; P. Tebt. I 27 (113 BCE; Kerkeosiris), line 55; cf. Wilcken (1912: 271). Hermann (1955: 105–6) regards it as an obscure fiscal specification, independent of legal category, used even for land cultivated by royal cultivators. Its taxation in P. Haun. inv. 407 = Christensen (2002) and, for example, in O. BM EA 20041 = Kaplony-Heckel (2001: 35–6) speaks against identifying it as a category of tax-free land or as exempt from rents (*ekphoria*), *contra* Keenan and Shelton (1976: 3), Kaplony-Heckel (2000), Manning (2003: 56). See now Armoni and Maresch in P. Köln XI, p. 121–6, 131–2, who associate the category with cleruchic land under the royal administration.
- ¹⁸ See below, pp. 88–9.
- ¹⁹ Wilcken (1912: I 280–4); Préaux (1939: 463–77); Crawford (1971: 53–75); Fischer-Bovet (2008: 208–13).
- ²⁰ Uebel (1968: 5).
- ²¹ E.g. P. Oxy. XIV 1635 (44–37 BCE; Oxyrhynchus); cf. Bingen (2007 [1983]).
- ²² Rostovtzeff (1922: 42–55); for the Memphite estate of Apollonios, Ptolemy II's finance minister, see Wipszycka (1961).
- ²³ For fiscal estates, see comments to P. Col. I inv. 480, pp. 22–9; cf. UPZ II 153–5 (255–4 BCE; Thebes) with editors' notes, pp. 6–7, where one-half of the gift land (*doraia gê*) belonging to an Ibis sanctuary along with the sanctuary and the office of prophet are sold by the state to two brothers, after the previous owner, a Greek, probably had them confiscated for tax debts.
- ²⁴ One could translate *idioktetos gê* as “privately owned land” to distinguish it from *idiotikê gê*, with which it was used interchangeably in the Roman period, but given that their legal status was the same and that analogous changes are evident in terms for land categories, it is less cumbersome to translate both as “private land.” Samuel's (1989: 57–9; 1993: 172–3) interpretation of the term *idioktetos gê* fails to appreciate its legal alienability.

- 25 For hereditary lease: Rostovtzeff (1910: 25–8); Wilcken (1912: 285); Préaux (1939: 166, 185, 496); Taubenschlag (1955: 266–9); Vandorpe (2000b: 194–6); editor's comments to P. Lips. II 124, pp. 40–1; Maresch (2009); for private ownership, Rostovtzeff (1941: 289–90); Seidl (1962: 111); Rupprecht (1994: 236); Turner (1984: 148, 154–5); Manning (2003: 193–7, esp. 196).
- 26 P. Lond. VII 2188 (148 BCE; Hermonthis), lines 209, 335 with the editor's note, p. 295.
- 27 This was a major difference between Ptolemaic and Roman Egypt. The Roman categories were no less used for fiscal purposes, but, unlike the Ptolemies, the Romans taxed private landowners differently from tenants on public land, so the fiscal categories better reflect land-tenure status.
- 28 For example, in the Wilbour Papyrus, on which see Gardiner (1948). Similarly, the Harris Papyrus lists Ramses III's donations of land to various Egyptian temples; Grandet (1994).
- 29 For donations to the Edfu temple, for example, see Meeks (1972: 131–5); cf. Manning (2003: 74–9).
- 30 Veisse (2004a: 228–43) stresses the ambivalence of the priests towards the revolts but does not deny their involvement; on the chronology of the revolt, Pestman (1995).
- 31 Meeks (1972); Clarysse (2003: 20); Manning (2003: 245–66).
- 32 Christensen (2002: 111–17) favors a higher area of 57,000 arouras for the Ptolemaic period than Buzter's (1976: 74) 49,731 arouras for the pharaonic period; see further below.
- 33 This contrasts with the land terminology adopted in a mid-second century BCE dispute between the priests of Hermonthis and Pathyris over a piece of land, where the neighboring plot in one instance is given as private royal land: P. Lond. VII 2188 (148 BCE; Hermonthis), lines 209, 335.
- 34 P. Haun. inv. 407 was the basis of Christensen's (2002) Cambridge University Ph.D. dissertation.
- 35 P. Haun. inv. 407, col. 13, lines 281–3: ἀπὸ τῆς ἐν

φορολογία σιτοφόρου σὺν τῇ κατακεχρημένῃ εἰς ἄμπελον καὶ φοίνικας γῆς.

- 36 Private land, P. Haun. inv. 407, cols. 13–14, lines 294–311; brushwood land, cols. 14–15, lines 312–28; ownerless land, col. 15, lines 335–8; cf. Christensen (2002: 100–6). Brushwood land was assessed at low rates.
- 37 P. Haun. inv. 407, cols. 15–6, lines 345–74; cf. Christensen (2002: 106–9); only the entry for the 62 arouras of island brushwood land survives, which would have been followed by a small amount of highland brushwood land (cf. cols. 14–5, lines 312–28) and then perhaps by derelict ownerless land before finally being added to the total of derelict land.
- 38 It is called dedicated land in col. 1, line 18, and maybe in col. 1, line 6 (restored), but the text is fragmentary here; cf. the land ceded (*parakechoremênê*) by cleruchs to the temple of Horus, which is still listed under cleruchic land, col. 4, lines 93–9, and col. 7, lines 150–9. For dedicated land (*anieromenê gê*) as a category possibly distinct from temple land (*hiera gê*) cf. Otto (1905: 417; cf. 1908: 90–1 n. 3); Rostovtzeff (1909: 623); Wilcken (1912: 279–80); Crawford (1971: 96); for doubts about this distinction, cf. Shelton (1976: 123–4 n. 43); Keenan and Shelton (1976: 14).
- 39 Schentuleit (2008: 346–55).
- 40 Butzer (1976: 74).
- 41 Christensen (2002: 111–17, cf. 159–61).
- 42 Vandorpe (2000b: 173).
- 43 On the other hand, one then wonders why ownerless land would be put here and not with royal land.
- 44 P. Haun. inv. 407, col. 15, lines 335–8, Christensen (2002: 104–5); on the category of ownerless land as a sign of the existence of private property, see Swarney (1970: 26–31, esp. 31); McGing (1997: 308–9).
- 45 P. Lips. II 124 (c. 137 BCE; Herakleopolite), line 124; O. Bodl. I 120 (perhaps 135 BCE; Thebes), line 4; P. Tebt. I 5 (118 BCE; Arsinoite), line 111; BGU VI 1216 (perhaps 110 BCE; Memphite or Aphroditopolite), line 83; BGU XIV 2437 (late I cen., Herakleopolite), lines 15, 18, 21, 22,

- 32; BGU XIV 2440 (late I cen., Herakleopolite), line 62.
- 46 Rostovtzeff (1941: 289–90).
- 47 Brashear (1980: 136).
- 48 The dating is based on the identity of two katoikic cavalrymen mentioned in BGU XIV 2441 and 2444, who also appear in a slave-sale contract, P. Köln IV 187 = C. Ptol. Sklav. I 5, datable to 146 BCE; cf. comments to C. Ptol. Sklav. I 5, p. 206 and, in more detail, to C. Ptol. Sklav. II 244, p. 977. Brashear (1980: vi) originally assigned the land registers to the first century BCE on the basis of content similar to the datable Herakleopolite texts in BGU VIII.
- 49 BGU XIV 2437 (II or I cen. BCE; Herakleopolite); cf. Brashear (1980: 136 n. 1).
- 50 BGU XIV 2441, line 28, and XIV 2447, lines 12–13 (II or I cen. BCE; Herakleopolite).
- 51 Bingen (2007 [1984]: 201–2) had presumably accepted the figures in the text as total areas for each land category and assumed the remainder to be royal land, causing him to exaggerate the extent of royal land: “On the qualitative level, the land registers of BGU XIV give the impression that there was a great variety of types of connections between the population and the arable land, ranging from private land to several types of direct or indirect working of farms. From a quantitative point of view, however...the royal land, the queen's dowry, and the lands dependent on the *idios logos* (another branch of the government) make up the bulk of the arable land, and their surface area is generally of a different order of magnitude from that of other categories of land.”
- 52 BGU XIV 2437 (II or I cen. BCE; Herakleopolite); cf. BGU XIV 2440 (II or I cen. BCE; Herakleopolite).
- 53 BGU XIV 2439, lines 8–11: royal land (*basilikê gê*) 1,042.75 ar.; queen's land (*basilissês gê*) 141.25 ar.; private account (*idios logos*) 35.5 ar.; and separated revenue (*kechorismenê prosodos*) 16 ar. Bingen's remark, quoted in note 51 above, apparently alludes to this text but draws a different conclusion about the figures' significance.
- 54 Rathbone (1990: 134); cf. Brashear (1980: 129).

- 55 P. Tebt. I 5 (c. 118 BCE; Tebtunis, Arsinoite), lines 110–11: [τ]οὺς δὲ τὴν ιδιόκτητον καὶ τ[ὴν] ἱερὰν καὶ τὴν κληρουχικὴν καὶ τὴν ἄλλην τὴν ἐν ἀφέσει. Though temple and cleruchic land are restored in the lacuna, private land is clearly considered land in release, which also makes the restoration convincing. Line 113 refers to exemptions for these holders (*apoluomenoi*) and also to the harvest assessment (*epigraphê*), but in view of the size of the lacuna between them they are probably not directly linked.
- 56 P. Tebt. I 124 (c. 118 BCE; Tebtunis, Arsinoite), col. 2, lines 30–40 = C. Ord. Ptol. 54; the exemption of the settlers (*katoikoi*) as well as Alexandrians from periodic *epigraphê* and *eisphora* is mentioned in a number of texts, cf. Bingen (2007 [1995]: 149–50).
- 57 Rostovtzeff (1922: 42–3); P. Rev. col. 36, line 15, col. 43, line 11, col. 44, line 3.
- 58 Rostovtzeff (1910: 14–27).
- 59 Rostovtzeff (1922); comments to P. Köln V 222, pp. 192–3; Thompson (1999a); P. Oxy. II 280 (88/89 CE; Oxyrhynchus), line 10, and P. Oxy. XLII 3047 (245 CE; Oxyrhynchus) show that a Ptolemaic gift estate in the Oxyrhynchite nome was partly incorporated into an imperial estate during the Roman period.
- 60 Wipszycka (1961: 173–4) points out that the Memphite estate was scattered with no centralized management, unlike the consolidated 10,000 arouras of Apollonios' Arsinoite estate in Philadelphia.
- 61 On Zenon and his duties, Rostovtzeff (1922); Clarysse and Vandorpe (1995).
- 62 P. Petr. II 42 (a) (250/249 BCE; Arsinoite?), lines 1–4; Rostovtzeff (1922: 47).
- 63 Rostovtzeff (1922: 50–3); Wipszycka (1961: 175–8).
- 64 Rates of rent for tenants were comparable with rates on royal land but paid to estate holders: Rostovtzeff (1922: 44–5); Wipszycka (1961: 179).
- 65 Rostovtzeff (1922: 44–5, 50–3, 142–3).
- 66 Rostovtzeff (1922: 73–4); Tomsin (1952a: 99–100); cf. P. Lond. VII 1954–5 (257 BCE; Philadelphia, Arsinoite).
- 67 Rostovtzeff (1922: 42–6). The names of recipients of

landed gift estates remained as fossilized designations in tax registers for decades or centuries later: P. Col. IV 120, p. 194, and P. Köln V 222, p. 194 n. 12; cf. P. Mich. III 182 (182 BCE; Krokodilopolis, Arsinoite), line 18, where a privately owned garden is located on both royal land and gift land.

- ⁶⁸ For Persian and other Hellenistic parallels, cf. Herman (2000: 106–15); for *doreai* as Ptolemaic donations to temples in keeping with the pharaonic tradition, commentary to P. Col. IV 120, pp. 185–8. For the endowment of an ibis shrine designated as gift land (*doraia gê*), UPZ II 153–5 (255–254 BCE; Thebes). It is important not to lose sight of the generic meaning of *dorea* in Greek as a gift or donation.
- ⁶⁹ For fiscal *doreai* in Ptolemaic Egypt, see comments to P. Col. I inv. 480 (198–197 BCE; Arsinoite), pp. 22–9 = C. Ptol. Sklav. I 5; O. Wilbour, pp. 18–21; P. Col. IV 120 (129 BCE; unknown), pp. 175–88; P. Köln V 222, pp. 193–4; Préaux (1939: 46); von Reden (2007: 129).
- ⁷⁰ Diodorus Siculus 33.20: the editors of P. Col. Zenon II, p. 181–2 maintain that this was a fiscal gift estate just as those awarded to other commanders, high officials, and temples in this period, but Schäfer, commentary to P. Köln 222–225, pp. 189–90, 194–5, 203–7, wonders whether it was land, as in the case of the *dorea* of his subordinate officer; on Galaistes, cf. Hölbl (2001: 196).
- ⁷¹ P. Köln V 222–225 (145–143 BCE; Herakleopolite); the nature of this gift is still unclear; cf. editor's commentary, pp. 194–5.
- ⁷² The gift estate of Artemidoros mentioned in P. Oxy. II 280 (88/89 CE; Oxyrhynchus), line 10, and P. Oxy. XLII 3047 (245 CE; Oxyrhynchus) is a fossilized designation, so the date when it was granted during the Ptolemaic period is unclear.
- ⁷³ For the concentration of cleruchs in the Fayyum, see Thompson (2007); on the geographical distribution of cleruchs generally, see Fischer-Bovet (2008: 196–200); for the Oxyrhynchite nome, cf. Rowlandson (2007b: 208–11).
- ⁷⁴ P. Lille I 10 = P. Count 1 (c. 254–231 BCE; Ghoran,

- Arsinoite), frag. 3, lines 32–44; Clarysse and Thompson (2006: 93–4 n. 9, 148–9).
- ⁷⁵ Clarysse and Thompson (2006: 153, 241–6).
- ⁷⁶ Similarly, Thompson (2007: 309); for the cultivable area of the Fayyum, 1,200–1,500 km², see Chapter 2, p. 38.
- ⁷⁷ Clarysse and Thompson (2006: 93).
- ⁷⁸ Fischer-Bovet (2008: 200–5).
- ⁷⁹ Cf. Monson (2007d: 374–5).
- ⁸⁰ Kunkel (1928); Wolff (1948: 63–4); Préaux (1939: 463–80); Crawford (1971: 53–8); Oates (1995).
- ⁸¹ P. Cair. II 31073 (c. 240 BCE; Tanis, Arsinoite) = Monson (2007a); the new reading of the village name as Tanis (*T 3-ny*) supersedes its identification with Tebtunis; discussions in Monson (2007a; 2007d) and elsewhere must therefore be corrected.
- ⁸² See Chapter 4, pp. 141–53.
- ⁸³ P. Cair. II 31073 B, recto, cols. 1–3.
- ⁸⁴ For the identity of *c³.w-n-100* with Greek *hekatontarouroi* and these with cavalry settlers (*katoikoi hippeis*), see Clarysse (1979a: 736–7); Clarysse and Thompson (2006: 93, 148–54); Fischer-Bovet (2008: 208); cf. P. Lille Dem. III 108.
- ⁸⁵ P. Cair. II 31073 A, recto, col. 2, lines 3–4: *p³ gy dlc md.t ntⁱ (n) n³ rmt.w l-lr shn (n) p³ tmy lrm n³ wcy.w*.
- ⁸⁶ Felber (1997: 151–2); Vandorpe (2000b); cf. P. Cair. II 30615 (98 BCE; Tebtunis), lines 8–9.
- ⁸⁷ See Chapter 4.
- ⁸⁸ Crawford (1971); Pestman (1983b); Lewis (1986: 104–23); Verhoogt (1998b).
- ⁸⁹ Crawford (1971: 5–38); Criscuolo (1978); Verhoogt (1998b: 107–48).
- ⁹⁰ Chiusi (2005: 60–1, 65–9).
- ⁹¹ Wilcken (1912: 288–96); Tomsin (1969); Rowlandson (2006: 175–6); Jördens (2009: 440–1).
- ⁹² E.g. Jördens (2009: 103), who otherwise stresses discontinuity.
- ⁹³ Crawford (1976; 1980); Rowlandson (1996: 55–61); Jördens (2009: 440, 506–11).
- ⁹⁴ Rathbone (1993: 102–4, 109–10) regards them as being modeled on Ptolemaic gift estates; Parassoglou (1978:

- 10–11); Kruse (2002: 598); Rowlandson (1996: 56).
- ⁹⁵ Kruse (2002: 598); Jördens (2009: 506–11) compares them with lease auctions of imperial estates in North Africa; cf. Kehoe (2007: 56–64).
- ⁹⁶ Rostovtzeff (1909: 626); Wilcken (1912: 300); Johnson (1936: 639); Tomsin (1969: 273–4); Evans (1961: 243); Whitehorne (1980: 220); Stead (1984); Alston (2002: 199 n. 14).
- ⁹⁷ Monson (2005); cf. Lippert (2008: 90) and Jördens (2009: 343). Temples could opt for maintaining control in lieu of receiving state subsidies, but the land would still be charged rent like public land. It was distinguished as “priestly land” or “royal priestly land” (*basilikê gê hiereutikê*), PSI X 1143 (164 CE; Tebtunis), lines 11–12, and P. Tebt. II 390 (167 CE; Tebtunis), line 24, or alternatively, “public priestly land” *demosia hiereutika edaphê*, P. Tebt. II 311 (134 CE; Tebtunis).
- ⁹⁸ Wilcken (1912: 304 n. 3, 305–6); Mitteis (1912: 111–12); Rowlandson (1996: 45–8, 180, 184).
- ⁹⁹ For the concept of cession (*parachoresis*) in the law of Greco-Roman Egypt, see Rupprecht (1984).
- ¹⁰⁰ Rowlandson (1996: 43–8) for the standard view; for the alternative suggestion, cf. Bowman and Rathbone (1992: 121); Maresch (2002: 239); Rathbone (2007b: 701 n. 14).
- ¹⁰¹ Cleruchic land: e.g. P. Giss. I 60 (118 CE; Naboo) and P. Flor. III 331 (c. 113–120 CE; Naboo); cleruchs: P. Berl. Leihg. I 5 (158/159 CE; Theadelphia); both examples are discussed further below.
- ¹⁰² Chang (2010: 73–87, esp. 79 and 80 n. 40); editor's remarks on P. Petaus 43–4, pp. 184–5; cf. Rowlandson (1996: 46–7).
- ¹⁰³ Wilcken (1912: 287–8); Tomsin (1964); Lewis (1970a: 8–9); Rathbone (1993: 85–6); Jördens (2009: 107–8).
- ¹⁰⁴ See Chapter 4. The term *idiotikê gê*, which was rare in the Ptolemaic period, became the overarching term for private land but *idioktetos gê* was still used in the Roman period. Contrary to Wilcken (1912: 303), Stollwerck (1971: 39), and Bowman and Rathbone (1992: 109 n. 11), they did not differ in meaning and could be used

interchangeably; see Chang (2010: 80); cf. Rowlandson (1996: 42–43).

105 Cf. Rowlandson (2006: 180–1).

106 The darker areas on the map indicate higher population density according to data from 1895 to 1910 CE discussed in Chapter 2 and shown in Table 2.3.

107 P. Lond. III 604 (47 CE; Krokodilopolis, Panopolite?).

108 Wilcken (1908: 534–8); Plaumann (1910: 87–8, 96); cf. Plaumann (1910: 17–19, 70–7) for the role of archons and prytaneis in Ptolemais.

109 Wilcken (1908: 534–8); Abd-el-Ghani (2001: 27–8); Ptolemaeus, *Geographia* 4.5.65–6.

110 Wilkinson (1841: 265); Letronne (1974 [1842]: Plate 1) labels Krokodilopolis on his map precisely in the location of Athribis. Petrie (1908: 3) excavated a pharaonic tomb near Athribis that was later reused, probably in the Greco-Roman period, to bury mummified crocodiles, which might account for this village's name, “city of crocodiles.”

111 Vleeming (1993: 45–8, 65–6); in the Apollonopolite nome, Christensen (2002: 147–51) has found that highland was four times more extensive than island land, while island land was assessed higher tax rates, suggesting greater fertility.

112 P. Lond. III 604 A, lines 1–6.

113 Plaumann (1910: 97–100).

114 For the phrase *idiotika edaphê* as a category in the land survey, cf. P. Berl. Leihg. I 5 (158/159 CE; Theadelphia, Arsinoite), line 17.

115 P. Lond. III 604 B, lines 246–54 (end of royal land), lines 255 and following (private land); cf. Plaumann (1910: 87, 98–100).

116 It is also conceivable that tax rates did not correspond precisely to the categories, in which case one would expect to find $\frac{3}{4}$ -artaba land also classified under private land and likewise both one-artaba and $\frac{3}{4}$ -artaba elsewhere classified under temple land.

117 Wilcken (1912: 283, 304, 307); Wallace (1938: 13–19).

118 P. Giss. I 60 (118 CE; Naboo, Apollonopolite Heptakomias).

- 119 P. Flor. III 331 = W. Chr. 341 (c. 113–120 CE; Naboo, Apollonopolite Heptakomias).
- 120 Column III, lines 18–28; Johnson (1936: 36).
- 121 Wilcken (1912: 403–4); Wallace (1938: 240–1); Lichtheim (1957: 33–6); Rowlandson (1996: 30). However, *hieratika* is not the “sacred account” but rather “sacred land” (with *edaphê* understood) just as in P. Ryl. II 213 (late II cen.; Thmouis, Mendesian), *passim*, cited as a parallel for this “sacred account,” where it probably refers to sacred or temple money taxes (with *telea* understood).
- 122 P. Giss. I 60 and P. Flor. III 331 = W. Chr. 341; cf. Rowlandson (2006: 177).
- 123 Cf. Rowlandson (1996: 33–4, 36, 45); for cleruchic land as a separate category, cf. P. Tebt. II 324 (208 CE; Tebtunis), line 11, where it is distinguished from katoikic land; P. Strasb. VI 584 (141 CE; Theadelphia?), lines 6, 9, 10; P. Congr. XV 15 (80 CE; Karanis), lines 78, 96; and P. Princ. II 42 (93 CE; Oxyrhynchus), lines 9, 13 with Clarysse and Kruit (1990: 124–5).
- 124 P. Oxy. XLIX 3473 (c. 161–169 CE; Oxyrhynchus), lines 34–5, and P. Berl. Leihg. I 1 (165 BCE; Theadelphia), *passim*, P. Berl. Leihg. I 4 (165 BCE), *passim*, and P. Berl. Leihg. I 5 (158/159 CE), *passim*.
- 125 BGU IV 1046 = W. Chr. 265 (166/167 CE; Arsinoite), Wilcken (1912: 215); on the other hand, if *praktores sitikôn dia katoikôn* is analogous to the holders of the office for collecting metropolitan grain dues (*praktores sitikôn metropolitikôn*), e.g., in P. Oxy. IX 1196 (212/213 CE; Oxyrhynchus), then perhaps these were tax collectors responsible specifically for estates belonging to the members of the katoikic and metropolitan status groups respectively; see Lewis (1997: 71–2).
- 126 SB XIV 12208; Youtie (1978); Bagnall and Worp (1980); Bagnall (1985: 300–1).
- 127 P. Ryl. IV 655 (c. 300–350 CE)
- 128 Sijpesteijn and Worp (1978); Bowman (1985); Bagnall (1992).
- 129 Bowman (1985: 148–9).
- 130 Rowlandson (1996: 63–9, 97–101); see Chapter 4, pp.

151--3.

- ¹³¹ Rowlandson (1996: 66–7; 2006: 178).
- ¹³² P. Bour. 42 (166/167 CE; Hiera Nesos, Arsinoite) with editor's commentary, pp. 135–214.
- ¹³³ Rowlandson (2006: 177) provides a convenient table of the land classification in these villages.
- ¹³⁴ See Collart's comments in P. Bour. pp. 156–9.
- ¹³⁵ P. Berl. Leihg. I 5 (158/159 CE; Theadelphia).
- ¹³⁶ See P. Petaus 44–5, p. 184; cf. P. Oxy. XLIX 3473 (c. 161–169 CE; Oxyrhynchus), lines 34–5.
- ¹³⁷ Sharp (1999b: 161–2).
- ¹³⁸ See Chapter 4, pp. 136--41.
- ¹³⁹ P. Cair. Isid. 9–11 (309–312 CE; Karanis, Arsinoite); Bagnall (1985: 292–3; 1992: 132–6, 146–9).
- ¹⁴⁰ Bagnall (1985: 291–3, n. 30) assumes with good reason that similar proportions would have obtained in Karanis during the second century CE.
- ¹⁴¹ P. Oxy. XLIV 3205 (c. 297–308 CE; Phernouphite toparchy, Mendesian).
- ¹⁴² Blouin (2007a: 148; 2007b; forthcoming).

Chapter 4 The continuity of agrarian institutions

Introduction

From a long-term perspective, the land tenure regime was not static in Egyptian agrarian history.¹ On the other hand, not every new political regime brought major changes. The social relations within agrarian communities and the underlying effects of land scarcity, environmental constraints, and economic risk could undermine or at least limit the scope of institutional reforms motivated by other factors. Arguably, the Roman empire was better positioned than many other regimes in Egyptian history to undertake substantial reforms because of the security of its political control. Such reforms conceivably could have more to do with the political structure of the empire than with the conditions in Egypt. Agricultural producers' demands – whether for the maintenance of customary tenure rights or for privatization – may also have changed in response to the government's legal, fiscal, and administrative institutions. Bottom-up pressures of local communities and top-down pressures of the state may not always have had equal weight, but one cannot ignore either of them in understanding agrarian change.

The previous chapter pointed to regional continuities from Ptolemaic to Roman Egypt that highlight a close relationship between land tenure and geography. The extent of private land rights as indicated by the official classification of land corresponds closely with areas that probably had higher population density. However, land classification provides an imperfect index for the exclusivity of land rights. This chapter adopts a more contextual approach to address some unanswered questions about the development of land rights. Was the category of private land in the Ptolemaic period

equivalent to private land in the Roman period? Did Roman legal institutions provide better protection of property rights than Ptolemaic ones? To what extent was temple land confiscated in the Roman period and converted into public land? How did the cultivators of public land differ from tenants on private estates?

The results of this chapter provide further evidence for a relatively conservative land-tenure regime, which maintained key features of the ancient Egyptian legal tradition and remained well attuned to local ecologies on the Nile. Though these results are consistent with the Boserup-Demsetz model, one should not interpret them one-sidedly, as evidence that agrarian communities in Egypt were impervious to foreign intervention and that the land-tenure regime was stuck to the rhythms of geography and population. The *relatively* conservative land tenure regime must be understood in relation to the reforms to fiscal and administrative institutions addressed in the next chapters. Fashioned to a greater extent by the nature of the political regimes, fiscal institutions exhibit the most radical break, and they gradually re-shaped the Egyptian land-tenure regime itself. Legal reforms pertaining to land tenure and the security of property rights in the first decades of Roman rule were only one minor factor driving the transformation of the agrarian economy. They might have contributed to an expanding market for land but not as much as the change in fiscal regimes would have.

Much of this chapter compares private land rights in Ptolemaic and Roman Egypt, including the institutional features of land markets, inheritance, and the enforcement institutions. The established view holds that the early Roman administration created private land by transforming katoikic land into full-fledged property and by selling off state-owned land.² Bingen has argued that Ptolemaic institutions prohibited Greeks from investing in land, which forced them to enrich themselves as tax farmers and state agents in the mere redistribution of the peasants' agricultural production.³ Like others, he assumed that access to land in Ptolemaic Egypt was restricted to certain status

groups, including temple dependants, cleruchs, and royal tenants, which obstructed the formation of a market for arable land.⁴ Accordingly, the significance of Roman reforms would have been to open access for private investors to acquire property regardless of personal status. Paradigmatic of this model is the transformation of katoikic land, which was restricted to those with katoikic status in the late Ptolemaic period but became fully private in the Roman period. Such land was probably concentrated in the Arsinoite nome and to a lesser extent in the adjacent nomes. The model fails to account for other types of land that were already in private ownership in the Ptolemaic period, especially in the Nile Valley.

The end of the chapter examines land rights on royal or public land in Ptolemaic and Roman Egypt. The royal tenants of Ptolemaic Egypt adopted communal institutions of land management that invite comparison with modern peasant communities in Egypt and sub-Saharan Africa. The similarities are not due to historical continuity nor to an intrinsic pre-industrial mode of production. Rather they illustrate similar responses to similar ecological and economic conditions. The prevalence of communal institutions on royal land in the Fayyum in contrast to the Nile Valley conforms to the Boserup-Demsetz correlation between land scarcity and property rights. The persistence and development of communal land management in the Roman period reflects the viability of agricultural production without secure property rights in marginal environments. In the more densely populated Nile Valley, landowners treated public land more like private property and in some cases even used their influence over authorities to secure exclusive rights. All this suggests that the land-tenure regime was rooted in economic, demographic, and geographic factors that the Roman administration could not or did not wish to transcend despite its favorable attitude to private ownership.

Private land in ancient Egypt

Land within the traditional Egyptian fiscal categories, royal and temple land, could either be privately held or be under the institutional management of officials.⁵ Such management typically involved customary leaseholds or labor agreements under state or temple supervision, which are discussed later in this chapter. It contrasts with private land, which could be alienated by donation, inheritance, or sale. Because such land was also situated within royal and temple domains, many scholars insist that there was no conception of private property.⁶ However, the distinction between possession and property turns on the legal rights of the landholder with respect to the land rather than on the administrative and fiscal arrangements by which that land was governed. The obligations and constraints limiting the rights of Egyptian landholders varied according to their status and changed over time but there is sufficient evidence to trace the alienability of land in the Greco-Roman period back to much older traditions.

Some form of private ownership of land is known at least as early as the Middle Kingdom (c. 2050–1650 BCE) and becomes well attested by the New Kingdom (c. 1550–1070 BCE).⁷ Sources from the New Kingdom distinguish a category known as private land, literally “land of free people” (*ḥnmḥ.w*), which was located either within temple estates or directly under royal taxation.⁸ Though the term does not appear explicitly in the Wilbour Papyrus (dated to around 1147 BCE), an official tax register of royal and temple estates in Middle Egypt, Gardiner has argued that it corresponds to the so-called apportioning lands mentioned in that text, whose holders paid their taxes directly to the state.⁹ Its status has been compared with private land in the Ptolemaic period, which also existed within the fiscal domain of the king or the temples.¹⁰ Vandorpe finds similarities between the taxation of such private land in the New Kingdom and the taxation of private land within the royal and temple domains during the Ptolemaic period.¹¹

Private land in the New Kingdom was certainly heritable but the heirs often did not divide the estate. Instead one of

them or an appointed agent would act as its trustee and distribute the revenue according to shares. In one case from the reign of Ramses II, the legal title to these shares of land was disputed after being held in common for several generations because a rivalry broke out between the heirs over which of them would act as the trustee. The court investigated by consulting witnesses as well as older documents and land registers, which had allegedly been falsified in this case by bribery.¹² In a similar dispute from the forty-sixth year of the same pharaoh (1245 BCE), one man leased out his share to a temple without the permission of his brother, who was managing the estate as its trustee, which prompted the judges to divide the property formally in the land registers.¹³ The same basic tensions arising from this custom of undivided ownership among heirs, who were each entitled to their own personal shares, are nicely illustrated in several well-known Ptolemaic legal disputes.¹⁴

Private conveyances of arable land by sale and donation are attested from the tenth century BCE onwards.¹⁵ Private land (³ḥ nmḥ.w) is explicitly the object of sale in several texts.¹⁶ What is peculiar about sales of land from this period is its low price relative to other commodities.¹⁷ Menu ascribes the low price of land to an incomplete bundle of rights but, despite her suspicions, there is no evidence for any restrictions on the owners' ability to sell the land.¹⁸ The land's location within a royal or temple estate is not enough to enable one to conclude that there were such limits. Similarly, there is no reason to suppose that a tax on land transfers imposed by the state or the temple implies that their consent was needed to sell the land.¹⁹ More interesting is Menu's statement in her earlier work about the emergence of private property within royal and temple estates.²⁰ The only known limit on the owner's rights to such property was the fiscal burden that the king and the temples imposed on land within their domains.

Land-lease contracts between private landowners and tenants are also known during the Kushite (c. 760–656 BCE) and Saite (c. 685–525 BCE) dynasties.²¹ Many of the parties

to lease contracts had temple-status designations, but whether they obtained their fields by virtue of that status is unknown. For example, a priest of Amunrasonter describes his land as “my fields in the domain of Amun.” One can only guess whether the fields were given as remuneration for priestly service or whether the owners purchased them.²² Even if some priests did receive temple land for their service, they were still able to sell that land to someone else and to have their children inherit it.²³ Thus sometimes the landowner appearing in the leases was a woman or a man with no status designation.²⁴ During the Saite period, owners of land within the temple domain of Amun could lease it to tenants who paid them rent (*šmw*) and also paid the owner's harvest tax (*šmw*) to the temple.²⁵

At the beginning of the reign of Darius I in 519 BCE, when Egypt was a province of the Persian empire, he issued a decree ordering the compilation of Egyptian laws down to the forty-fourth year of king Amasis as well as its publication in Demotic Egyptian and an Aramaic translation. A copy of this decree survives on a papyrus dating to the Ptolemaic period.²⁶ Lippert has persuasively argued that the so-called legal manuals of the Ptolemaic period were in fact compilations of Egyptian laws, often with commentaries, derived in part from the codification that Darius ordered but with later additions as well.²⁷ The Ptolemaic legal system recognized these as the “laws of the country” (*nomoi tês choras*) or the “law of Egypt” and they continued to form the basis for Egyptian contracts and for decisions before Egyptian judges (*laokritai*) during the Ptolemaic period.²⁸

The laws of property, lease, and inheritance feature prominently in one of the best preserved compilations of Egyptian laws on a papyrus dating to the Ptolemaic period.²⁹ It deals at some length with the exclusive rights of a landowner (*nb n 3h.w*) as well as how they limited the rights of his tenants and it provides model clauses for the writing of lease contracts.³⁰ Some of the laws mentioned appear to go back to the eighth century BCE or earlier.³¹ As in Egyptian inheritance law of the New Kingdom, the Hermopolis Legal Code allowed the oldest son or oldest

daughter (if there were no sons) to act as the principal heir and trustee for the undivided property of all the heirs, including land. In the event that a real division between them was necessary, the principal heir had first choice, or else he acquired a double share as well as the share of any deceased heir who was childless.³² These provisions were clearly relevant to a trial in 170 BCE in the town of Asyut in the southern Nile Valley.³³ It was a case with striking resemblance to the one in the reign of Ramses II described above, as two brothers quarreled over rights to undivided shares of temple land inherited from their father, of which the elder brother had been the trustee until their disagreement arose.

Private land within royal and temple estates continued to be bought and sold in the Ptolemaic period through formal contracts of sale just as any other private property. The third-century BCE dossier of Demotic documents from the Apollonopolite nome, known as the Hauswaldt papyri, shows that private land rights existed within the estate of the Horus temple.³⁴ It provides direct evidence for the inheritance and sale of arable temple and royal land.³⁵ These were the only two categories mentioned in the Edfu donation text inscribed in the first century BCE on the wall of the Horus temple in the Apollonopolite nome. As discussed in the previous chapter, that text records the extent of the temple's estates across several nomes and was probably copied from a document from the beginning of the Ptolemaic period in order to secure its rights.³⁶ Comparing the donation text with the papyri from the Hauswaldt dossier suggests that the designations – royal and temple land – signified a fiscal status which concealed the bundle of legal rights that the landholders could exercise.

Land markets and social status

It is often assumed that obtaining private land, particularly within temple estates, was contingent upon one's personal status.³⁷ Before the reforms to temple estates in the early Roman period, it is often difficult to distinguish whether the

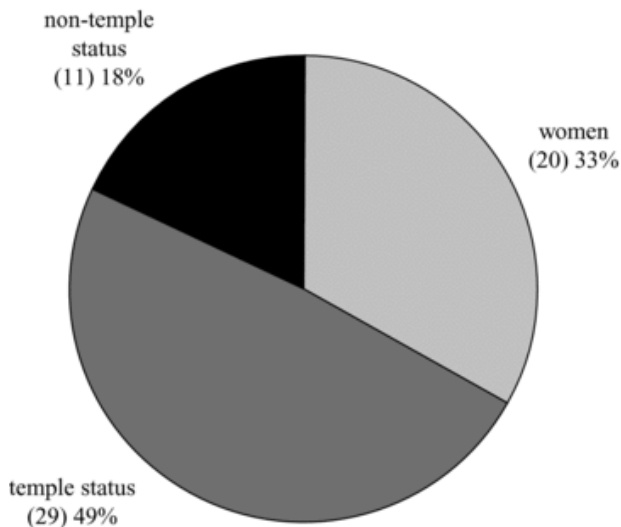
landholders were private owners with alienable rights or whether they were laborers or leaseholders directly under the watch of temple officials.³⁸ Regional differences are also observable in the prevalence of private land rights versus customary tenure, especially within the royal domain, but also on temple estates.³⁹ Access to land within peasant communities with customary tenure is an issue to which this chapter will return later in relation to royal or public tenants in Ptolemaic and Roman Egypt. The question posed in this section is whether private conveyances of land were restricted to members of particular status groups. In the case of cleruchic land, Roman reforms seem to have removed Ptolemaic restrictions, thus making it freely alienable along with all private land. Yet to gauge the significance of Roman reforms for expanding the land market, one must examine whether the acquisition of private land in the Ptolemaic period had been similarly limited. This can be done by analyzing the parties to Ptolemaic land sales in Demotic and Greek contracts as well as the bidders at royal auctions of land.

The Hauswaldt dossier, mentioned above, seems at first sight to support the hypothesis that land rights were linked to status and thus that the possession of alienable rights to temple land did not amount to full ownership. The majority of these documents record transactions within one tightly knit community of cultivators, in which the males usually had the status title, “herdsman, servant of Horus,” indicating some relationship to the temple.⁴⁰ Women, who typically do not have titles, also appear frequently as the parties to the land conveyances and other contacts attested in this dossier but they were probably of the same families. However, in one text a woman must forfeit five plots of arable land to a “Greek born in Egypt” after having used them to secure a substantial loan, which suggests that there was no formal prohibition against outsiders, including Greeks, acquiring land.⁴¹

In the entire corpus of Demotic Egyptian land conveyances from the Ptolemaic period, Greeks and others with no explicit relationship to temples figure prominently.⁴² All of

these texts are from Upper Egypt. Of the 107 known parties to the conveyances, persons designated as Greeks, Nubians, soldiers, or without any status constitute 30%. Women, whose status is never designated, constitute another 27%. Even if they were sometimes the relatives of priests, women's rights to own temple land independently suggest that it was not directly tied to the fulfillment of priestly obligations. That leaves 40% of the parties whose designation indicates some priestly or temple-dependent status. Admittedly, the data are sensitive to biases in the preservation of papyrus archives from particular groups. However, if anything these biases probably exaggerate the number of temple dependants rather than under-represent them. Thirty of the 107 parties attested are found in the Hauswaldt dossier, where most men have the same temple status. Removing this one large dossier reverses the pattern, causing the percentage of Greeks and others without any temple status to go up to 40% overall.⁴³

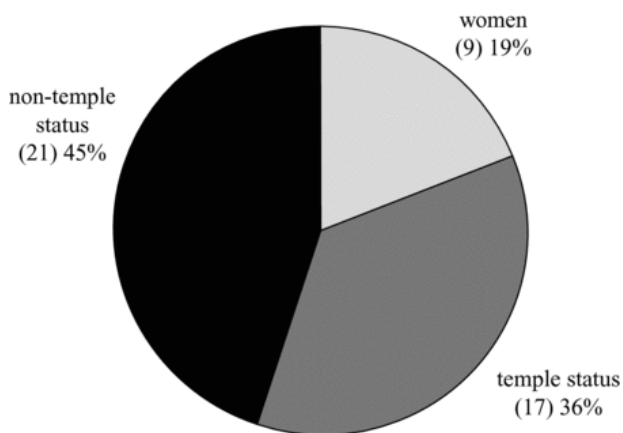
Figure 4.1 Parties to conveyances, temple land



The results are even more interesting when one separates the parties to conveyances of temple land from the parties to conveyances of non-temple land. [Figures 4.1](#) and [4.2](#)

represent these data. They suggest that temple status may have conferred some advantage in obtaining access to temple land. Presumably certain priests were awarded land for their service, as in earlier periods, but the process is unclear and is better addressed later in this chapter in relation to Roman reforms to temple estates. Nevertheless, a formal prohibition against conveyances of temple land outside of that community (analogous to restrictions on Ptolemaic katoikic land) finds little support in the data. Even on temple estates individuals were able to sell their plots to people without temple status, including Greeks. To give an example, a Greek cleruch (*wjnn nb* 3h) named Proitos sold 35 arouras located in the temple estate of Hathor in Pathyris to an Egyptian woman in 184 BCE.⁴⁴ In conveyances of land that did not belong to temple estates, the diversity of buyers and sellers was even greater, with soldiers and Greeks appearing 45% of the time.

Figure 4.2 Parties to conveyances, non-temple land



Again the corpus is biased by the large number of temple dependants attested in the Hauswaldt dossier, so it probably under-represents the frequency of sales involving people without any temple status. Moreover, Egyptian priests were likely to appear as parties to land sales in the countryside simply because they were the ones most able to afford to

buy land.⁴⁵ Thus their status may have had little to do with their involvement in these transactions. Secondly, one should remember that the corpus only includes Demotic contracts. Temple notary scribes wrote them, and priestly judges handled many of the disputes arising from them. For these reasons Egyptians would have been more likely than Greeks to enter into such contracts. Unsurprisingly, Greeks and soldiers in the Ptolemaic army appear predominantly as parties to the Greek land conveyances discussed below. Yet their appearance in Demotic contracts as well suggests that they were not excluded from access to the Egyptian land market.

The royal auction, where private landowners acquired royal or temple land from the state, provides further evidence for openness in the land market of Ptolemaic Egypt.⁴⁶ That both Greeks and Egyptians could bid against one another for land is shown in an auction of 222 BCE in the Apollonopolite nome for 30 arouras, which formerly belonged to an Egyptian priest.⁴⁷ In a letter to a higher official, one of the bidders, an Egyptian, accused the presiding official Milon of corruption for overlooking his higher bid in favor of another bidder, who was Greek.⁴⁸ Soon afterwards Milon was forced to flee, as he also faced allegations of corruption concerning the inspection of temple revenues.⁴⁹ Soon afterwards in the same place another royal auction occurred, where a consortium of eight “herdsmen, servants of Horus,” together purchased forty-five arouras.⁵⁰ It comes from the same group of Hauswaldt papyri attesting land sales among members of this temple status group. Hence it casts some doubt on whether they obtained their land only because of their status and demonstrates that they could invest in new land by purchasing it from the state.

Also found in the archive of Milon was a copy of the announcement for the auction of arable land, vineyards, and priestly offices in 223/222 BCE.⁵¹ The language of the announcement suggests ownership: the buyers “will own it on the same terms as the previous owners acquired it.”⁵² Because grain rents (*sitika ekphoria*) were still due to the king on land sold at auction, scholars traditionally regard

the object of sale as a hereditary lease rather than freehold, but there is no evidence for any limitation on the owner's exclusive and alienable rights to the land.⁵³ That arable land acquired at auction could later be sold is shown by private conveyances of arable land, in which the seller tells the buyer that he obtained the land at a royal auction.⁵⁴ In this case, the receipt for payment (*diagraphê*) that the successful bidder had received from the royal bank was considered proof of legal title, so it would be handed over to the next owner in the subsequent sale.⁵⁵

The revenue generated from its sale was booked to the king's private account (*idios logos*), since the land sold at auction had typically been declared "ownerless" (*adespotos*) and therefore reverted to the king.⁵⁶ Auctions of land are attested in the period immediately after the Great Theban Revolt (207–186 BCE).⁵⁷ A letter from sometime after 187 BCE reports that in one area of the Lycopolite nome most people died because of the revolt and the land went dry, while neighboring landowners were appropriating land that had become ownerless.⁵⁸ Often, especially in the Demotic attestations, the land sold at auction in this period was temple land and continued to be designated as such after the auction, presumably because its fiscal status was not impaired by the state's sale of ownership rights.⁵⁹ The bidders at the auctions were diverse, including people with Greek or Egyptian names, soldiers, and those with temple status, so it is unlikely that there were any formal restrictions. As Manning notes, "one place where markets existed was in the public auction during Ptolemaic Egypt," but it was not the only one.⁶⁰

Greek contracts of sale suggest that Ptolemaic institutions encouraged the development of the private land market. A recently published registry of contracts from the notary office responsible for the Pathyrite and Lycopolite nomes of southern Egypt reveals multiple entries for sales of grain-producing land within just a few days.⁶¹ Dozens of Greek sale contracts for grain-producing land survive from the Pathyrite nome, a few of which relate to purchases in neighboring nomes.⁶² The expression grain-producing land

(*sitophoros gê*) recalls the heading of the section in the Apollonopolite land survey from the late second century BCE, where it was further classified as private land (*idioktetos gê*).⁶³ During the second century BCE, the Ptolemies established two garrisons in the Pathyrite nome, one in Pathyris and one in Krokodilopolis, where they employed Egyptians as salaried soldiers.⁶⁴ Despite their Egyptian names and customs, these soldiers had the pseudo-ethnic status of “Persians”, which may have entitled them to a reduced poll-tax rate and which they passed on to their wives and children.⁶⁵ Males who were not on active duty and receiving a salary were designated “Persian by descent.”⁶⁶ Unlike Ptolemaic cleruchs who received plots of land (mostly in the Fayyum), these soldiers and their families in Upper Egypt had to acquire their land on the private market.

The Pathyrite contracts were notarized by the market controller (*agoranomos*), who was responsible for writing and registering contracts, especially for immovable property, to establish a public record for the security of property rights.⁶⁷ Parties with the status “Persian” or “Persian by descent” are by the far the most common in Greek land sale contracts from the Pathyrite nome. However, there is no connection between their status and their right to purchase land. Most of the documents come from just a few family archives, so it is not surprising to find many transactions among members of this group.⁶⁸ Other parties attested in these transactions are priests of the local Egyptian temple of Souchos and Aphrodite as well as men and women without any status designation.⁶⁹ The contracts were in the form of a sale and used Greek terms that suggest legal ownership: so-and-so “has sold (*apedoto*) one-half of the grain-producing land belonging (*hyparchês*) to him.”⁷⁰ The fact that ownership and not leasehold was at stake is confirmed by the very different formula used for the purchase of a leasehold in the Pathyrite nome, which took the form of a cession (*parachoresis*) rather than a sale.⁷¹

Aspects of the Egyptian legal tradition also feature in these Greek land sale contracts. Women are attested frequently as

owners of grain-producing land in their own name and appear as parties to the sales, though accompanied by a male guardian as required in Greek contracts. Often the parties were siblings who owned the land in the traditional manner of Egyptian joint ownership and whose shares were designated as undivided (*adiairetoi*).⁷² In some of the contracts, the object of the sale is a share of an undivided estate: for example, so-and-so has sold the “one-fifth share of grain-producing land belonging to him and his brothers undivided.”⁷³ That there was an unbroken continuity of Egyptian ownership on private land in the southern Nile Valley from the Ptolemaic to the Roman period – female ownership, undivided shares among legal heirs as well as real division between heirs – is shown in the land register from a village named Krokodilopolis, probably in the Panopolite nome, dating to 47 CE.⁷⁴

There were few restrictions on who could purchase land in Roman Egypt.⁷⁵ One exception was meant to prevent official corruption and conflicts of interest. A law compilation primarily from the Augustan period concerns issues falling under the authority of the emperor's private account (*idios logos*), successor of the Ptolemaic private account, which received among other things the revenue from land auctions. One of the laws specifies that certain high officials in the Roman administration were prohibited from purchasing land from the state within the Egyptian nome where they were serving.⁷⁶ Land continued to be sold in the Roman period at public auctions, following a procedure similar to the Ptolemaic one, which conferred ownership rights on the buyers.⁷⁷ If anything, the auction of public land seems to have increased in the Roman period, perhaps as part of a conscious policy promoting private ownership but possibly also because the buyers had greater incentives to buy under the Roman fiscal regime.⁷⁸

Some scholars suggest that katoikic land did not lose its restrictions immediately.⁷⁹ As in the Ptolemaic period, they argue, only members of the gymnasial group, who still styled themselves “settlers” (*katoikoi*) in the Arsinoite nome, could own katoikic land in the early Roman period. The case

of an Egyptian priestly family in the village of Tebtunis owning katoikic land in 35 CE speaks against this hypothesis, but one cannot be sure that its members lacked gymnasial status.⁸⁰ In any case, the persistence of a separate property register for katoikic land into the second century CE does imply that its status was not identical to other private land.⁸¹ Just like conveyances of katoikic land, royal land, and leaseholds in the Ptolemaic period, conveyances of katoikic land in the Roman period took the form of contracts of cession (*parachoresis*) instead of contracts of sale (*prasis*). Only the latter were used for property conveyance.⁸² Whatever restrictions remained only weaken the case for sweeping Roman land tenure reforms. Nevertheless, katoikic land in this narrow legal sense was only a subset of private land. On balance, the evidence points toward a fairly open market, where one's personal status did not prevent one from acquiring private land in either the Ptolemaic or the Roman period.

Property rights and public records

Though the purchase of private land within the temple or royal fiscal domain was possible for anyone, many landowners in Demotic and Greek sale contracts of the Ptolemaic period had some kind of temple and military status. Unambiguous evidence for Greeks buying up land to form estates in the Nile Valley is rare. It is anyway difficult, if not impossible, to distinguish Greeks from Egyptians, especially as Greek-Egyptian double names became common starting in the second century BCE. The accumulation of landed estates by self-professed Greek urban elites in the countryside during the Roman period, many of whom were arguably of Egyptian background, has been seen with some justification as an altogether different phenomenon that requires explanation.

Yet if there was an expansion of the land market in the Roman period, it was not due to the removal of any Ptolemaic prohibition on buying land, so one must search for another explanation. The impact of Roman fiscal reforms

will be discussed in [Chapter 5](#). It is also conceivable that Roman legal innovations contributed to increasing investment in Egyptian land during the Roman period. This section considers the possibility that changes in the registration and enforcement of contracts strengthened property rights and facilitated exchange. Legal historians sometimes point to the introduction of the state property archive in early Roman Egypt as a watershed moment in the history of land rights. In the earlier literature, this was compared to the German *Grundbuch*, in which all transfers of immovable property needed to be registered in order to claim legal ownership.⁸³

Contrary to what is usually thought, the development of the property archive in Roman Egypt owed much to pharaonic and especially Ptolemaic precursors. There were official property archives that could assist in determining rightful ownership throughout Egyptian history, but their organization and function are obscure.⁸⁴ Two New Kingdom court cases were mentioned above, one where land registers were consulted as evidence in a dispute over an undivided inheritance and another where a court-ordered division of property among heirs required the land to be re-registered under the individual owners' names.⁸⁵ Even more directly relevant is the Ptolemaic reception of the Egyptian legal tradition as reflected in the Hermopolis Legal Code. This contains one law referring to an official archive (*s.t-n-sh*), where land ownership was registered.⁸⁶

The coexistence of parallel legal systems for Egyptians and Greeks as well as cultural differences in Ptolemaic Egypt conceivably placed practical limits on the openness of land markets.⁸⁷ The Ptolemies, however, sought to harmonize these tensions as much as possible with a number of innovations. An act of legislation (*diagramma*) by Ptolemy II probably standardized a pluralistic approach to the legal system, specifying the status of Greek judges (*chrematistai*) for hearing cases of Greeks and Egyptian priestly judges (*laokritai*) for hearing cases of Egyptians. It may also have established regulations for writing contracts.⁸⁸ Nevertheless, Egyptian judges continued to base their decisions on

Egyptian compilations of laws and legal manuals.⁸⁹ If disputes arose between Greeks and Egyptians, a common court (*koinodikion*) was available, presumably composed of both types of judges and therefore competent to resolve complex cases. Distinguishing between these communities must have been increasingly difficult in the later Ptolemaic period, prompting a royal decree in 118 BCE ordering that the language of the document rather than the ethnicity of the parties should determine whether the case went before the Greek or Egyptian judges.⁹⁰

Especially in the early Ptolemaic period, Egyptian temples played an important role in establishing the security of property rights. The priestly judges typically met before the temple, where temple oaths could also be demanded to resolve disputes.⁹¹ According to one Ptolemaic text, the office of an Egyptian judge had to be purchased from the state just as other priestly offices.⁹² Using a notary scribe attached to the temple was the most secure means to convey property in the Egyptian tradition. These scribal offices were usually hereditary, especially in Upper Egypt, but the Ptolemies tried to make them shorter-term royal appointments.⁹³ The notarized contracts merely provided extra protection by memorializing an oral ceremony before witnesses, usually sixteen (later eight), who signed the back of the contract.⁹⁴ In some cases, the first party wrote a confirmation and the second party his assent in their own hands. The use of witnesses in an oral ceremony must have ensured some degree of publicity for the protection of property rights. However, that kind of publicity demands a more familiar relationship between the parties and their community than notarized contracts.⁹⁵

Early Ptolemaic contracts in Greek had a similarly oral character that relied even more on personal relations and trust between contracting parties to secure their property rights. One clause that may belong to the above-mentioned legislation (*diagramma*) of Ptolemy II demands that contracting parties, in this case to a loan agreement, have their witnesses seal the document and have one witness appointed as its guardian.⁹⁶ This refers to the format of the

Greek six-witness double document, of which there are many surviving examples.⁹⁷ In order to make the contract valid the parties had to be able to agree on six witnesses and one trustworthy person to keep the document in case one of them should ever need to produce it in court. Sometimes the parties wrote or had someone write a brief note of assent just as in the Demotic contracts.⁹⁸ To provide an added piece of security, a copy or abstract of the text was written on another part of the papyrus and then the abstract was rolled and sealed. These requirements would have been conducive to transactions within tightly knit groups in close proximity, such as the Greek military settlers in the countryside, but not for long-distance impersonal transactions.

In Alexandria and in the countryside, Ptolemaic royal officials provided an alternative mechanism for drawing up and storing contracts. A collection of Alexandrian laws from the third century BCE includes a clause stating that buyers and sellers of land, houses, and vacant lots must pay the transfer tax and register the transaction with the city treasurer, which safeguarded their contractual rights.⁹⁹ While the described procedure of registration is peculiar to Alexandria, it seems likely that the market controller (*agoranomos*) played a similar role in the countryside. The act of registration (*katagraphê*) by the market controller provided a public register of the transaction.¹⁰⁰ When the market controller drew up contracts he acted as the notary and there was no need for witnesses. Even Demotic Egyptian contracts could be brought to the market controller to have them registered in his office in order to gain additional security.¹⁰¹ The market controller presumably passed on his archive of registered property to his successor. Recourse to this type of registration in the nome metropolis was especially important in transactions involving real property such as land sales, but there is no reason to think that it was required for a transaction to be valid. At least in this one respect – as a form of publicity and security – its function was similar to the property archive (*bibliothekê enkteseôn*) of the Roman period, discussed below.¹⁰²

The market controller typically resided in the metropolis of each nome but in 174 BCE it seems there was just one market controller for the entire Thebaid region including the Pathyrite nome. The garrisons at Pathyris and Krokodilopolis established in the mid-second century BCE were equipped with branch offices, where Egyptian scribes were trained in the proper legal formulas.¹⁰³ Expanding access to the notary service of the market controller presumably facilitated transactions and made property ownership in the countryside more secure. In the case of the Pathyrite nome, it is tempting to see this expansion as a privilege for the military families based there, since they acquired their land on the private market rather than receiving land grants. This allowed them to enter into a transaction with other members of the community either in Greek or Demotic and to be sure that their rights were secured with a Greek registration. A transaction based solely on a Demotic document secured by a temple scribe and local witnesses might not be as highly valued should they decide to sell the land to incoming soldiers or other outsiders.

Initially Greek and Egyptian contracts served different ethnic communities. By going to the market controller in the metropolis or a branch office, anyone could gain the additional security of having notarized contracts without witnesses or of registering previous contracts. Another kind of registration (*anagraphê*) for both Greek and Egyptian contracts could be obtained at the writing office (*grapheion*) attested in villages already in the third century BCE.¹⁰⁴ Writing office registers and abstracts in Demotic from the third century BCE and the late second or early first century BCE are now attested.¹⁰⁵ A royal decree in 146 BCE ordered that Egyptian documents should also be summarized in Greek.¹⁰⁶ According to Wolff, the two types of registration were complementary: “The *anagraphê* was the condition on which the contract could be produced as evidence in judicial controversies before Greek courts, while the *katagraphê* facilitated future disposal of the property.”¹⁰⁷ The decree of 146 BCE may reflect the increasing social and economic interaction between Greeks and Egyptians whose ethnic identity became blurred and who often found themselves in

complex contractual disputes.¹⁰⁸ By making a summary of Demotic contracts available in Greek alongside those of Greek contracts, it would have been easier for judges to decide cases with bilingual evidence.

The writing of contracts saw changes in the early Roman period that coincide with changes in registration and in the role of the village writing office (*grapheion*). The witnesses disappear from both Greek and Demotic contracts, and Egyptian notary families attached to temples disappear, as notaries employed in the writing office instead wrote all contracts. The operation of these archives was leased to private individuals who charged a scribal fee (*grammatikon*) for their services. In lieu of witnesses, one or both of the contracting parties had to write out an elaborate Greek summary of the Demotic or Greek contract. If he or she was illiterate, then the task went to another scribe (*hypographeus*).¹⁰⁹ A copy of the contract with the subscription would remain in the writing-office archive, pasted together with others into a long roll (*tomos synkollesimos*). The writing-office scribes would also write up a shorter summary list (*eiromenon*) of the contracts and an abbreviated list (*anagraphê*) with only the titles of the contracts.¹¹⁰

With respect to the writing office's archival function, there is strong continuity from the Ptolemaic to the Roman period. On the other hand, the writing office went from being a place for the registration of contracts with short summaries, drawn up between the parties separately as Greek six-witness double documents or Egyptian contracts, to being a place for the writing, storage, and registration of all contracts in both Greek and Demotic. The persistence of Demotic contracts, though increasingly rare, to the end of the first century CE casts doubt on Lewis' argument that the Romans deliberately sought to eradicate them out of cultural or ethnic hostility.¹¹¹ However, with the adoption of such standard procedures, where Demotic scribes were in the service of the writing office rather than attached to temples and where contracting parties or (if they were illiterate) their substitutes had to summarize the text in Greek, it is

perhaps not surprising that Greek contracts eventually drove out Demotic ones. The widespread access in Egyptian villages to notarized contracts with third-party state enforcement that did not depend on the reliability or availability of witnesses would have been conducive to impersonal transactions.

The creation of a new public archive for the registration of property (*bibliothekê enkteseôn*) in each nome metropolis during the first century CE would have further enhanced the possibility for long-distance impersonal contractual relations within Egypt.¹¹² Initially, it was part of a larger archive of public records (*bibliothekê demosiôn logôn*) but by the late first century it was housed in its own building with its own magistrates (*bibliophylakes enkteseôn*).¹¹³ The organization of these public archives in the late first and early second century CE is well known thanks to a long legal dispute in the Arsinoite nome, which cites an analogous case in the Oxyrhynchite nome and prefectural decrees that imply a similar organization in other nomes.¹¹⁴ The two presiding magistrates who served three-year terms were apparently liturgical officials.¹¹⁵ Given the financial burden of being liable for its expenses, the office was probably compulsory, which is also suggested by the fact that the heirs of keepers who died in office were forced to serve the remainder of their term.¹¹⁶

In 89 CE, Mettius Rufus responded to reports about the poor maintenance and preservation of the property archives despite the orders of previous prefects. His decree sheds considerable light on the purpose of this archive and the way that the prefect thought the archive ought to operate. Its importance for this question merits a full quotation of the text:

Proclamation of Marcus Mettius Rufus, prefect of Egypt. Claudius Arius the governor of the Oxyrhynchite nome has informed me that neither private nor public business is receiving proper treatment owing to the fact that for many years the abstracts in the property record-office have not been kept in the manner

required, although the prefects before me often ordered that they should undergo the necessary revision. Therefore I command all owners to register their property at the property record-office within six months, and all lenders the mortgages which they hold, and all other persons the claims which they possess. In making the return they shall declare the source from which in each case the possession of the property devolved upon them. Wives also, if on the strength of some native law have a lien on the property, shall add an annotation to the property-statements of their husbands, and likewise children to those of their parents if the enjoyment of the property has been secured to the latter by public instruments and the possession of it after their death has been settled on their children, in order that those who make agreements with them may not be defrauded through ignorance. I also command the scribes and recorders of contracts not to execute any deed without the authorization of the record-office, being warned that such a transaction has no validity and that they themselves will suffer the penalty for disregarding orders. If the record-office contains any property-returns of earlier date, let them be preserved with the utmost care, and likewise the abstracts of them, in order that if afterwards an inquiry should be held concerning persons who have made false return, they may be convinced thereby. In order then that the use of the abstracts may become secure and permanent, so that another registration shall not be required, I command the keepers of the record-office to revise the abstracts every five years, transferring to the new lists the last statement of property of each person arranged by villages and by types (of property). The 9th year of Domitian, Domitianus 4.¹¹⁷

How closely this decree corresponds to the actual practice remains a matter of debate.¹¹⁸ In theory, individuals were required to report to the archive whenever property changed hands, for example through sale or inheritance. The scribes

of the village writing offices who notarized and registered contracts were required to check the archives for conflicts and to send copies and summaries of new contracts to the nome capital in order to update the records at the central nome archive, which in turn sent copies to Alexandria.¹¹⁹

The corresponding picture is one of immense documentation of private transactions as well as comprehensive records of each individual's private wealth, especially immovable property, organized in lists by village and by type. This centralization of property records arguably led to a more impersonal market for land and credit. It facilitated transactions and the accumulation of land across multiple nomes better than the Ptolemaic system of temple or village registration of property rights and contracts secured by local witnesses. Public archives enhanced private property rights by providing a written public record, against which notarized contracts had to be checked according to Mettius Rufus' decree. Potential buyers would have fuller confidence that they would obtain the property free of legal entanglements from third parties and that they would have protection in the event of a legal dispute. Registration in the public archives was not sufficient to establish legal ownership because registration was not strictly mandatory, but it provided added legal protection, which, to judge by the size of the archive, implied in the sources, many property owners took advantage of.¹²⁰

To improve private business transactions and to prevent fraud by parties to contracts were explicit aims of Mettius Rufus' decree but the property archive also assisted the public business of the Roman state. It gave the central authorities the information they needed to determine who should be liable for compulsory magistracies.¹²¹ In the Arsinoite case, when the ex-keepers of the archive were deemed financially liable, the presiding judge notified the current keepers of the property archive in order to find out what they owned, so that he could sequester and sell off their assets.¹²² Hence the development of public archives in the late first century CE probably facilitated efforts to fill magistracies by compulsion as private landowners no longer

found voluntary service in the local administration sufficiently attractive. The occasion of registration also provided an opportunity to collect the transfer tax for houses and other real property just as Ptolemaic registration had done.

The registration of cleruchic land went through a circuitous evolution in the transition from Ptolemaic to Roman Egypt. The procedures of contract registration in the Ptolemaic period described above applied only to privately owned land, which could be freely alienated with contracts of sale, but not to cleruchic land, which was allotted in exchange for military or other state service. Military officials regulated the allotment and redistribution of cleruchic land by assigning it to individuals in a property register (*graphê katalochismôn*). In the second and first centuries BCE, the privileged settlers (*katoikoi*) treated their land more like private property by having their wives and children inherit it without necessarily performing military service and by transferring it with contracts of cession (*parachoresis*) among themselves.¹²³ Much like royal land in the Fayyum, which was transferred within peasant communities by means of cessions, its explicit sale to outsiders was evidently not permitted.¹²⁴

After the Roman conquest, there was no more military obligation. The settlers (*katoikoi*), at least in the Fayyum where they were concentrated, became defined as a fiscally privileged group, equivalent to the gymnasial group in other nomes. However, the property register (*graphê katalochismôn*) remained in use for katoikic land even though the holders had fully alienable rights and paid the artaba tax just like owners of regular private land.¹²⁵ In the early Roman period, the register may have still been relevant because it afforded the descendants of Ptolemaic cleruchs or those who purchased land from them with continuous protection of their property rights. Whereas the public archive of property (*bibliothekê enkteseôn*) probably did not exist until the mid-first century CE, the katoikic property register constituted a central archive including copies of contracts pasted into rolls, land registers by village,

and also alphabetical registers of property by person, which may have been the model for the individual records (*diastromata*) when the new public archive was created.¹²⁶ Nevertheless, for reasons that remain obscure, the katoikic property register (*graphê katalochismôn*) continued to be an additional step in the process of transferring katoikic land to complement its registration in the public archive even into the late first and second century CE.¹²⁷ Perhaps such duplication was thought to enhance their legal claims.

There are several differences between the public archives of the Roman period and Ptolemaic institutions of land registration. In the Ptolemaic period, legal rights to real property such as agricultural land were conferred through an oral agreement memorialized in a written contract notarized by an Egyptian priestly scribe or by the market controller and registered in a local writing office and/or in the office of the market controller. Greek six-witness contracts could also be registered in the writing-office archive. The village writing office may have kept copies of the contracts pasted together into rolls, just as in the Roman period, and almost certainly kept lists and summaries, which in the case of Egyptian contracts were translated into Greek from 147 BCE onward. They could be checked in case of a legal dispute. In the reign of Augustus, witnesses disappear from Greek and Demotic contracts, and notary scribes employed by the writing office undertake the whole process of writing, registering, and storing contracts for the protection of legal rights. With the emergence of the public archive of property in the first century CE, the records of the village offices became centralized both at the nome level and in Alexandria.

Land tenure on temple estates

Even more than Roman legal innovations promoting land ownership, the confiscation of temple estates by Augustus has been regarded as a dramatic rupture with earlier Egyptian history. Most scholars mistakenly believe that nearly all temple land was thereby converted into public

land to be cultivated by public farmers or auctioned to new owners.¹²⁸ This section builds on a preliminary study, which proposed a different interpretation based on the especially rich evidence from Tebtunis in the Ptolemaic and Roman period.¹²⁹ The land-register data from Roman Egypt discussed in [Chapter 3](#) lend further support to its conclusions. The effect of Augustus' reform was in fact to recognize the private ownership of temple land and to turn into public land only what the temples had administered directly. Since there was already private ownership of temple land in the Ptolemaic period, this implies greater continuity in the land-tenure regime than has previously been assumed.

The property relations within temple estates were diverse throughout early Egyptian history. Grants of land to temple personnel were a common form of compensation attached to priestly offices, analogous to the grants made by kings to royal officials. What varied is whether the land remained attached to the office or became private property and whether the rights conveyed were rights to use the land or merely rights to its revenue. Only after the end of the New Kingdom are sales of private land within temple estates attested. These exclusive rights may have evolved out of stricter forms of dependence. Unfortunately, there is no way to determine the extent of private land within temple estates relative to land under more dependent forms of tenure, which likewise must have varied over time and from temple to temple.¹³⁰

As a result, it is often difficult to distinguish when a temple official involved in the administration of land is acting on behalf of the temple or as an individual stakeholder. In the New Kingdom an individual applied to the prophet (*ḥm-nṯr*) of Mont, a high-ranking priest, for permission to plant fruit trees on one aroura of temple land in the Upper Egyptian town of Hermonthis (Armant).¹³¹ Similarly, on the temple estate of Amun in Thebes during the Ptolemaic period, one finds the prophet leasing out temple land to an individual for ninety-nine years, presumably because it fell under his authority to do so on

behalf of the temple.¹³² This is one of the rare attestations of what one might justifiably call a hereditary lease.¹³³ In the land surveys of the temple estate of Amun in Thebes from the Third Intermediate Period (c. 1070--664 BCE), some land was registered “under the authority of” (*r-ḥt*) a prophet or other high-ranking priest of the temple, under whom the land was classified as being “in the hand of” (*m-ḏr.t*) various people designated as cultivators and often as soldiers or minor officials.¹³⁴ Besides other similarities with Ptolemaic survey methods, these 10th-cen.-BCE land registers occasionally refer to the previous cultivator, which calls to mind the method of redistribution among Ptolemaic cultivators of royal land.¹³⁵

At the beginning of the Ptolemaic period, an official called the “overseer of land” (*mr-ḥ*) was attached to certain temples, who was responsible for managing the land. The title is already attested in the New Kingdom for an official with similar duties.¹³⁶ In a group of texts from Akoris from end of the fourth century BCE, a dispute over the rights to temple land unfolds in a series of letters to this official from the landholders.¹³⁷ A recently published account roll from the Memphite nome in the third century BCE seems to relate to the cultivation of temple land by teams of workmen and animals under the direct supervision of the overseer of land.¹³⁸ In the land surveys from Kerkeosiris in the Fayyum in the late second century BCE, some areas of temple land were registered to and cultivated by the priests themselves, which implies direct management by the temple administration.¹³⁹ A royal decree from the same period applies the distinction between “leased” (*memisthomenê*) land and customary tenure “without contract” (*aneu synallaxeôs*) for tenure on temple estates, just as it was applied to the two types of tenure on royal land.¹⁴⁰

An intriguing case for understanding temple-land rights is the dispute between the priesthood in Pathyris of Souchos and Aphrodite-Hathor and the priesthood in Hermonthis of the bull-god Mont. The dispute was over land claimed by both temples that was located in the Pathyrite nome.¹⁴¹ The Hermonthite priests claimed to be the owners (*kyrieuontas*)

because the land had been donated to the sacred Bouchis bull and because they obtained an official order (*diagraphê*) from the deputy finance minister in 168/167 BCE.¹⁴² This royal dedication apparently violated the rights of the temple of Souchos and Aphrodite in Pathyris.¹⁴³ In 150/149 BCE, the Pathyrite priests made a petition accusing the Hermonthites of violence, questioning the legality of the official order, and pleading to have the land back. Their accusations initiated a hearing in Alexandria, where the Hermonthites sent three representatives. Soon afterwards cultivators chosen by the Hermonthite priests were working the land when the Pathyrite priests attacked them, took their clothes and tools, and drove them out. The Hermonthite priests then submitted their own petition, which was taken up by the Alexandrian royal court of justice. The Pathyrites who had used violence evaded arrest and again attacked the Hermonthite cultivators working the land.

Pending the final outcome of the trial at the royal court, an interim ruling was made at a hearing, probably before the governor (*strategos*) of the Thebaid region. According to a summary of the interim ruling, the custody (*teresis*) of the land and the collection (*synagogê*) of its harvest would go to those cultivators chosen (*procheiristhesomenoi*) by the Hermonthite priests.¹⁴⁴ They would continue to pay the harvest taxes (*ekphoria*) due to the king, but the remaining surplus (*epigenemata*) would be held in escrow by the state rather than be awarded to either temple until the ownership (*kyrieia*) of the land could be determined.¹⁴⁵ This is an important text for understanding the fiscal status of temple land, but even more relevant to this chapter are the land-tenure arrangements.

The priesthood that owned the land chose its own cultivators. The latter therefore also had a stake in the outcome and came to blows with cultivators from the other temple over the right to work the land. It is not clear whether these “chosen” cultivators were peasants with customary forms of tenure under the supervision of temple officials or whether they obtained formal leases on fixed terms. The second possibility is illustrated by the ten-year

lease taken from the priests in Pathyris on grain-producing land of the god Nechtharous by a consortium of cultivators; in that case, one of the cultivators sold his share to a priest of Souchos and Aphrodite with some years still left on the lease.¹⁴⁶ Pestman has shown that temple land in the Pathyrite nome, as elsewhere, could be under direct temple control and thus be managed by temple officials, be given out on lease, or be privately owned.¹⁴⁷ What may speak in favor of direct management here rather than a lease agreement between the temple and its cultivators is that the surplus (*epigenemata*) is to be paid to the temple.

Temple land in the Fayyum during the Ptolemaic period was evidently less extensive than in the Nile Valley.¹⁴⁸ A Demotic archive from a priestly family in Tebtunis contains a series of lease contracts for temple land. The landholders had a distinctive set of priestly titles, which denote a high status within the temple. Most texts date to the early first century BCE, but one lease contract from Tebtunis, in which a party has these titles, dates to the Augustan period.¹⁴⁹ An extraordinary document from this archive records a transaction between an individual priest and the administration of the temple. The temple leased (*šḥn*) the priest an area of temple land.¹⁵⁰ The legal formula is unlike a typical lease contract and the verb could also mean “transfer” or “entrust.”¹⁵¹ The priesthood explains what led to the transaction: “You are to pay the royal tax beginning with the crop of year thirty-three. We issue you the lease indicated above because the men named [the previous landholders] have not paid the royal tax for the aforesaid land.”¹⁵² In other words, the temple was able to seize and redistribute temple land that was in arrears on taxes. That the recipient of such land grants had certain alienable rights is shown in a slightly earlier document pertaining to exactly the same plot of land. The previous owner acquired the land by an exchange (*šb.t*) with another individual, whereby he gave him a different plot of land for this one; the duration of the exchange is described as “forever.”¹⁵³ It is conceivable that this was a hereditary lease, as attested in Tebtunis during the Roman period, but the recipient was at least able to alienate the land to another priest in an exchange. There

are no surviving sales of temple land (or indeed of any type of arable land) from the Fayyum until the Roman period.¹⁵⁴ In Upper Egypt, by contrast, sales of temple land were common and were distinguished from cessions of leaseholds.

The evidence cited earlier in this chapter in relation to land markets and personal status suggests that those with temple affiliations were more likely to appear as parties to private conveyances of temple land than of non-temple land. However, the appearance of parties with no affiliation to the temple in conveyances of temple land seems to rule out any formal prohibition on sales outside of that community. The relationship between temple status and private landownership on temple estates in Ptolemaic Egypt remains unclear. The most likely explanation is that temples were able to make grants of land to priests or other temple dependants on a permanent basis as an alternative to managing its cultivation directly or leasing it out for a fixed term. One may guess that the temple was able to make grants to temple personnel from ownerless land within its estate, grants that became in many cases the hereditary and even alienable property of the recipient.

The Roman reforms to temple land make sense only in light of the earlier Egyptian tradition, where temple estates were fiscal and administrative domains in which land tenure varied considerably. The new relationship between the Roman state and the Egyptian temples is shown in a petition, which the priests of Soknebtunis in Tebtunis made to the Roman prefect in 71/72 CE.¹⁵⁵ The petition reports that under the earlier prefect Petronius (24–21 BCE), 500¹/₄ arouras of the temple's estate were transformed into royal land. This affected not only Tebtunis but all Egyptian temples.¹⁵⁶ They had the choice of relinquishing control of the land and receiving in its place an annual state subvention (*syntaxis*) or keeping the land by paying an annual rent and foregoing the subvention. One typically assumes that the subvention was paid out of the revenues from temple land.¹⁵⁷ This would explain why the land kept that status in the Roman period even when it was in private ownership or was turned into public land so that the temple

had no direct control over it.

The Tebtunis priesthood chose to keep these 500¼ arouras instead of taking the subvention. The subsequent status of the land seems to be reflected in its unusual designation as public priestly land (*demosia gê hiereutikê*) or royal priestly land (*basilikê gê hiereutikê*), which may indicate that it was liable for rent to the state but remained in priestly control.¹⁵⁸ Maintaining direct administration over this land meant that the temple could allocate it to tenants from the temple community on limited-term or hereditary leases, as they continued to do into the second century CE.¹⁵⁹ Hereditary lease must be distinguished from private ownership of temple land because hereditary tenants could not sell the land and had to surrender it to the temple if they could no longer cultivate it.¹⁶⁰ The revenue presumably allowed the priesthood to pay its own annual rent to the state. However, the village scribe tried on several occasions to raise the temple's rent.¹⁶¹ The prefect had intervened once to help them, and in this petition they asked for his help again, allegedly so that the revenues from the land would continue to support their priestly offices and duties to the gods. One of the priests' arguments was their ancestral right, referring to the temple estate as the "inheritance of [their] ancestors" (*diadochê goneôn*) and suggesting that they could provide an official document to prove that the land had been continuously cultivated and passed down within priestly families.¹⁶²

This important document has been the key for interpreting all other attestations of temple land in the Roman period: thus temple land was either confiscated and turned into public land or confiscated and leased to the temple from the state for sublease to tenants. Such an interpretation leaves no room for private ownership after the confiscations of Petronius, so one is also left to assume that the Roman administration violated the individual property rights to temple land that are so well attested in the Ptolemaic period. Once the assumption of total confiscation is abandoned, the attestations of temple land in the Roman period are consistent with another interpretation. The Roman

confiscations were aimed at temple land under its direct administration, typically on some form of hereditary or short-term leasehold. There was no disruption of tenure on privately owned land within the temple's fiscal domain. It often retained its designation as temple land but was classified as a type of private land and was therefore liable only to the fixed tax of approximately one artaba per aroura extended to all private landowners at the beginning of the Roman period.¹⁶³ The Roman fiscal administration distinguished such fixed taxes (*kathekonta*), which were charged on privately owned temple land, from the rents (*ekphoria*) on public temple land, which had been confiscated and leased to public cultivators or whose temple had been forced to pay the rent.¹⁶⁴

The fullest evidence for direct continuity of private ownership of temple land from Ptolemaic to Roman Egypt comes from the very same temple in Tebtunis whose priests submitted the petition. It thus throws light on the petition itself. The village writing office (*grapheion*) in Tebtunis preserves several examples of full-fledged sales and cessions of temple land during the 30s and 40s CE that are identical to conveyances of private land in Roman Egypt.¹⁶⁵ In most cases the buyers and sellers have no discernible temple status, but in one case a priest of the god Soknebtunis named Psenkebkis son of Psuphis appears as one of the parties.¹⁶⁶ In addition to these explicit contracts of sale, there are other signs that temple land was in private ownership. The reference to temple land being free from outstanding payments of the one-artaba tax (*artabia*) and the dike tax (*naubion*) in one of the Tebtunis sale documents underscores the point that it was taxed like other private land.¹⁶⁷ The dike tax was charged on owners of private land to pay for the maintenance of the irrigation system in lieu of performing compulsory labor.¹⁶⁸ The inheritance of temple land through notarized contracts of property division is attested both for the family of Psenkebkis in early Roman Tebtunis and in similar property division documents from the Fayyum in the late second century CE, even within evidently non-priestly families.¹⁶⁹

The assignment of small parcels to temple land for compulsory cultivation is another strong indicator that the temple land in question was considered private property.¹⁷⁰ Owners of private land were sometimes taxed with compulsory liability for such parcels of neighboring derelict land.¹⁷¹ A lease of land (probably katoikic) in 158 CE stipulated that the tenant must also cultivate two arouras of temple land that belonged (*hyparchein*) to the owner.¹⁷² Though Ptolemaic cleruchs often used the term “to own” to describe their allotments, it seems to have connoted exclusively legal ownership in the Roman period. Given the prevailing assumption that all temple land had been confiscated, such allusions to temple land in the Roman period have usually been interpreted as references to public land, but in this case it was more probably private.¹⁷³

The existence of both privately owned temple land and temple land under the direct administration of the temples in the Roman period is consistent with the Ptolemaic and earlier Egyptian tradition. The petition by the priests of Soknebtunis in the first century BCE concerned the status of only 500¼ arouras. The temple possessed about 130 arouras just in the village Kerkeosiris during in the late Ptolemaic period, so its holdings in other surrounding villages and in Tebtunis itself were presumably much larger.¹⁷⁴ In other words, one has to distinguish between privately owned temple land in Tebtunis and the 500¼ arouras which the state wanted to convert into public land.¹⁷⁵ Thus the Augustan confiscation of temple land applied only to those areas where private ownership could not be established and where the temple itself leased out and administered the land.

This distinction between private and public temple land is found in the state granary accounts from the Fayyum in the second century CE. In Theadelphia “sacred land charged rent” (*hieratika ta en ekphoriôi*) is listed under a heading along with royal land that indicates that public tenants were the cultivators. In a separate category is the designation “sacred land charged taxes” (*kathekonta hieratika edaphê*), which is labeled with other types of private land as being

cultivated by cleruchs, a term that in this text refers to private landowners.¹⁷⁶ These taxes (*kathekonta*) on temple land are to be identified as the fixed rate of one artaba per aroura that was charged on all private land.¹⁷⁷ Previous interpretations of temple land in this category (*hiera gē epi kathekousi*) were based on the assumption that all temple land had been confiscated, but this view is no longer tenable.¹⁷⁸ Because this land was, as a rule, no longer under the direct control of temples after the Augustan reforms, public tenants on temple land paid variable rents, and private owners paid fixed taxes to the state granaries rather than to the temple.¹⁷⁹ It presumably retained its designation as temple land because its revenue was theoretically linked to the disbursement of subsidies in kind to the temples, as mentioned in the Tebtunis petition.¹⁸⁰

The case of Psenkebki, the priest of Soknebtunis in Tebtunis, illustrates how a modestly prosperous priestly family of the village benefited from the Roman regime of low fixed taxation and the protection of pre-existing property rights. Psenkebki died sometime between 35 and 46 CE, but his parents prepared a division-of-property document in 46 CE.¹⁸¹ In addition to their residential property, oil press, storehouse, and watchtower, his mother and father together owned in total approximately eight arouras of temple land and nine arouras of katoikic land. It shows that the rights to such land were protected as fully private alienable property with the help of a notarized document deposited in the village writing office (*grapheion*).¹⁸² If there were restrictions on how priests of Soknebtunis could convey private temple land in the Ptolemaic period, there is no trace of these in the early Roman period.

The impact of Roman reforms favoring private ownership of temple land must have been even stronger in the Nile Valley, especially in Upper Egypt, where temple estates were more extensive. There the standard bundle of private rights, including the rights to bequeath and sell the land to whomever one wished, was already established in the Ptolemaic period, but the owners paid hefty taxes at variable

rates. The land survey from Krokodilopolis in the Panopolite nome discussed in [Chapter 3](#) shows that probably about 21% of the village area was temple land assessed at the fixed rate of $\frac{3}{4}$ artaba per aroura by 47 CE.¹⁸³ Moreover, the temple land was consolidated with private land in heritable estates and could hardly have been restricted to those with temple status. Owners continued to adopt Egyptian inheritance practices and undoubtedly maintained unbroken possession from the Ptolemaic period, though now enjoying the Roman fiscal regime.

The Roman administration did not violate the property rights of owners of temple land, only the rights of temples to administer their estates directly. As compensation for the loss of revenue, the rent that the state collected from such land would, in theory, be used to finance an annual stipend to the priesthood. Moreover, the temples had the option of retaining direct control over their estates and foregoing the annual stipend, but then they would have to pay rent on the land to the state. Far from losing their land, private landowners within the temple estate were privileged under Roman rule. Not only did they enjoy the same legal protection of property rights as other private landowners, they became subject to the new Roman fiscal regime, which privileged all private landowners with a low fixed rate of about one artaba per aroura. Admittedly, for priestly landowners the reforms were a double-edged sword. They would keep a larger surplus from their land, while the temple revenues that had once made their priestly offices so lucrative declined. Jördens has pointed out that the privatization of temple land proposed here is consistent with several aims of the new regime: undermining the temples as independent bases of power while encouraging private ownership and retaining modest privileges for the Egyptian priesthood.¹⁸⁴ This interpretation may imply greater continuity in land tenure but reveals more radical changes in the fiscal and administrative status of Egyptian temple estates in the reign of Augustus.

Customary tenure on state land

The official terminology only partially captures the social and economic differences in land tenure between regions. The land registers were concerned largely with fiscal specifications, especially in the Ptolemaic period, when the taxes on royal, temple, and cleruchic land were paid differently or destined for different expenditures. In the Roman period a glaring difference between public and private land was in the method of taxation, and over time even the legal distinction between these categories disappeared.¹⁸⁵ On the other hand, the designation of land as private (*idioktetos* or *idiotikê*) also had legal significance in the period under consideration, implying the rights to buy, sell, and inherit such land in contrast to the more limited forms of leasehold and cleruchic tenure. The tenure of tenants on royal or public land in the Ptolemaic and Roman period is not so easily defined in legal terms. It seems to have varied depending on their social status and the local demands within the community. Such variation presents an opportunity to consider whether qualitative differences in land tenure also correspond to regional economic and ecological patterns.

There is a copious literature testing the hypotheses of Boserup's evolutionary theory of land rights by comparing land-tenure systems in sub-Saharan Africa and other parts of the world.¹⁸⁶ Sub-Saharan Africa provides a natural experiment because it is still one of the least densely populated agricultural areas in the world, so communal forms of agriculture are common, but it has recently experienced rapid population growth causing severe social tension and pressure for privatization. In densely populated African regions where land is scarce, such pressure is higher.¹⁸⁷ Africa's extreme ethnic, linguistic, and religious diversity also means that institutional similarities are more likely to be based on predictable responses to environmental conditions than on shared cultural or legal traditions. There was simply no uniform African land-tenure system, nor were the local or customary tenure systems static and unchanging.¹⁸⁸

Some Egyptologists have argued that the Nile's ecology can help explain its land-tenure system.¹⁸⁹ However, in these discussions the large royal and temple estates, where officials adjusted tax rates according to flood conditions and if necessary redistributed land, are often conflated with the communal institutions for peasants' redistribution of land within the village.¹⁹⁰ Studying peasant communities in twentieth-century Senegal, Park has found parallels with ancient Egyptian land tenure.¹⁹¹ Much like the Nile before the Aswan High Dam was finished in 1971, the Senegal River flooded annually, leaving behind a fertile layer of silt, until the completion of the Manantali Dam in 1988. Park points out that both the size of the flood and subtle variations in the basins that trapped its water on the Nile and Senegal rivers would have made annual conditions diverse. Some fields could be left dry while others overflooded, and the concentration of silt deposits could affect the fertility from year to year. Park argues that there were too many variables for peasant smallholders to manage the risk.¹⁹² Corporate land ownership was, for him, one solution to this ecological problem.

In Senegal, tribal elders administered communal property. Each year after the flood receded, the elders would redistribute the land according to current conditions. If one household's land was drier or less fertile than usual it might receive a share of land from another family. The family's farm might not be located on the same piece of land every year. It might change its shape or size or be relocated. However, access to communal land was never equal. In such a system, social networks and influence within the village would determine access to land, allowing established cultivators to assert priority over newcomers. On the Senegal River, the most powerful families were those believed to be descended from the original settlers. Their households had rights to the most land. Various other social status groups, whose ancestors supposedly arrived later, had lower priority. In high flood years, the local elders were able to offer larger than usual plots even to lower social groups or allow newcomers to cultivate the land and gradually be integrated into the community.¹⁹³

Modern Egyptian agrarian history supplies an even closer analogy to the type of land redistribution observable in the Greco-Roman period. There is anecdotal evidence for this type of redistribution in the Nile Valley, for example, in the Napoleonic *Description de l'Égypte*. Baer has suggested that land rights underwent a transition during the nineteenth century, as communal rights diminished within village communities where some plots were reallocated annually by village elders according to the level of the flood.¹⁹⁴ Tenure was not uniform, as communal institutions coexisted with *de facto* private land rights that could be sold, mortgaged, and inherited on land nominally owned by the state.¹⁹⁵ The so-called *ramyla* system of village land distribution persisted into the mid-nineteenth century, when detailed evidence becomes available. Village elders redistributed land from overburdened peasants who could not afford the cultivation and taxes to peasants with insufficient land. But in practice the land often went to wealthier well-connected landowners, a practice that created tensions, especially as land became scarce in the mid-nineteenth century.¹⁹⁶ The evidence comes mainly from the Delta, so it is insufficient to discern regional differences that presumably existed.

It is sometimes thought that the Fayyum was protected by its irrigation system from the uncertainties of the Nile, but the Fayyum also relied on flood-recession agriculture, filling its basins (*perichomata*) in late summer with the inundation.¹⁹⁷ Low floods would leave higher areas without water even when the system functioned properly. Moreover, the failure to maintain canals and dikes, opportunistic diversions of water from downstream cultivators, and subtle modifications of the landscape by previous floods would all contribute to uncertainty about whether small individual plots would provide consistent harvests. Environmental risks might favor communal property as much in the Fayyum as in the Nile Valley. Moreover, environmental uncertainty that causes communal forms of land tenure to evolve endogenously is by no means limited to regions that rely on flood-recession agriculture.¹⁹⁸ Risk is potentially a constant feature of agricultural systems, especially where peasants are living close to subsistence. Thus population pressure and

economic investment are also important variables because they exacerbate natural risks, increasing the scarcity of land and the pressure for privatization.

Royal land in the Fayyum was cultivated by peasants whose tenure was regarded by royal officials as a kind of leasehold and the revenue extracted as the king's rent (*ekphoria*).¹⁹⁹ In other respects, however, the relationship between royal tenants and the king or his officials differs from the relationship between private landowners and tenants. In the land registers from the Fayyum, the royal administration distinguished between two types of tenure on royal land: "leased" land (*memisthomenê*) and customary tenure "without contract" (*aneu synallaxeôs*).²⁰⁰ A similar distinction seems to be reflected in the third-century BCE Demotic survey of royal land in the eastern Fayyum: it distinguishes about eight "men who have leased in the village" (*n³ rmt.w i.ir shn*) from the ninety "cultivators" (*n³ wcy.w*).²⁰¹ Only a small proportion of royal land would have been assigned a lease contract that specified the length and terms of tenure. These were typically in response to special circumstances, for example, to create incentives for reclamation with a low fixed rent or to ensure the cultivation of specific crops.²⁰² The remaining tenants were organized into an association, which was called "the men of the village corporation" (*n³ rmt.w h tmy*) in third century BCE tax registers.²⁰³ They were represented by village elders who mediated disputes, regulating access to land and water, and assisted the village scribe with the survey of land.²⁰⁴

During the initial reclamation of the Fayyum, under conditions of abundant land and scarce agricultural labor, peasants were brought from villages of the Delta and the Nile Valley, and collectively received land from the managers of gift estates and from royal officials in charge of bringing the new land under cultivation. The best example is the manager of the Apollonios estate, who allotted 1,000 arouras of land to a corporation of peasants from the Heliopolite nome with their own elders, who distributed the land and presumably redistributed it each year according to the flood.²⁰⁵ The same can probably be inferred for the

group whose migration to the southwest Fayyum was organized by a royal official.²⁰⁶ These communities in the Fayyum remained bound to one another and to the local administration, sharing common fields for pasture, redistributing some land each year according to the flood, and obtaining annual seed loans from the state granaries. Similar social relations undoubtedly existed everywhere in Egypt, especially among peasants on sparsely populated or marginal land, as an alternative to private ownership.

How land was leased out and redistributed within the community of cultivators on royal land in the Fayyum and how this system of tenure differed from private land ownership in the Nile Valley has become clearer in the last few decades thanks to studies of land surveys drawn up by village scribes.²⁰⁷ Whereas Rostovtzeff interpreted the term “leasing out” (*diamisthosis*) as a periodic reallocation of leaseholds to new tenants at prevailing rents by royal officials, this idea has now been dismissed.²⁰⁸ In the Demotic and Greek surveys, the total area of some cultivators’ fields changed annually as their plots were redistributed. The early Ptolemaic land survey in Demotic mentioned above, from the village of Tanis in the eastern Fayyum, offers some of the best evidence for these redistributions and the communal rights to land that they imply.²⁰⁹

There are a total of nineteen tenancies preserved on the recto of the Demotic land survey; two of them are partnerships of cultivators working the same land. After the name of the cultivator, each entry begins with the size of his farm in the previous year. Then there are the additions and deductions of land, for which four possibilities are attested. Land could be received from the village, introduced with the phrase “what is before him among the village men” and followed by the amount of land.²¹⁰ Alternatively, an area of land could be deducted and transferred to the village through these so-called village men, who are presumably identifiable with the village associations mentioned above.²¹¹ The other two possibilities recorded in this section of the land survey are that the cultivator had obtained

additional land from someone else's fields or that he had transferred his own fields to another cultivator.²¹² The equivalent phrase in the Greek land surveys from Kerkeosiris is "what is allotted to him from the land formerly of so-and-so."²¹³ Unlike the third-century-BCE surveys, the later Greek texts from Kerkeosiris mention only the original holder of any added land and not the recipient of deducted land.²¹⁴ In the case of the complete survey of royal tenants for the year 116/115 BCE, it is usually possible to find out what happened to the deducted land by locating the entry where it was added to another cultivator.²¹⁵ After the additions or deductions in the Demotic land survey, the village scribe calculated the total land for the current year and sub-divided it according to the area charged at different rents and the area of each planted crop, as in the Greek land surveys.

There is nothing to suggest that any of the transfers to and from the village were involuntary. In contrast to recipients of cleruchic or temple land in Kerkeosiris and private landowners in the Nile Valley, royal tenants only cultivated productive land and are not found registered with land that is dry (*chersos*), flooded (*embrochos*), unflooded (*abrochos*), or salted (*halmyris*).²¹⁶ The reason is probably that cultivators could transfer unwanted parts of their land to the village and later receive additional land. In the Demotic land survey from Tanis, thirteen out of nineteen tenants transferred some land to the village that year, usually in small amounts. Four of nineteen received land from the village. If nobody wanted the land, it would probably be turned into common pasture or registered as out of cultivation (*hypologos*). In Kerkeosiris, only two tenants gave land to the village, but in both cases the land was unsown and presumably unsuitable for cultivation. Nobody seems to have received any land from the village, though this may be concealed by the elliptical Greek formula for additions and deductions. Almost all of the 69½ arouras held by the royal tenants collectively in Kerkeosiris in 116/115 BCE were used as common pasture.²¹⁷

The most common method of redistributing land among royal tenants in the Tanis land survey was through the

private transfers mentioned above. There is one private transfer of royal land in the Demotic survey between family members, but most were presumably just other villagers.²¹⁸ Such transfers are also known from the Kerkeosiris land surveys. Shelton suggests that such transfers in Kerkeosiris were voluntary and cast doubt on the extent of royal control over land tenure.²¹⁹ Voluntary transfers would ensure that tenants were not overburdened with land that they could not cultivate effectively or whose rent they could not afford. The pool of communal land would reassure tenants that, if they ceded some of their property, others would reciprocate and land would be available when they needed it again. However, under conditions of population growth and land scarcity, tenants who ceded land would find a smaller pool available later, so that they had an incentive to hold on to their land in spite of temporary losses. An alternative available to royal tenants was to sublease their plot privately. No such leases actually survive from the Ptolemaic period, but they are attested indirectly in other documents and must be distinguished from private transfers.²²⁰

Only three written examples of transfers of royal land survive. The transaction is called a cession (*parachoresis*).²²¹ One example comes from the village of Euhemeria, located on the western edge of the Fayyum.

To Peteimouthis, the village scribe of Euhemeria, from Batrachos, son of Apollonios: since I have ceded (*parakechoreka*) five arouras of the royal land that is registered to me near the same village to Apollonios, son of Harmiysis, from year 35 for all time (*epi ton hapanta chronon*)...[location specified], I think it ought to be registered over to him, as is appropriate. Farewell. Year 35. Mesore 24.²²²

The document was written on September 1, 83 BCE, just as the flood was at its peak and beginning to recede. At this point the tenants would have had a better idea about how much of their land would be productive and how much work they would need to do. The land survey texts were completed later, after the flood had receded and the land

was sown with crops. At that time the village scribe was able to record any changes in the size of each cultivator's plot from the previous year.²²³

The following example was written in the month of January, after the cultivator had already invested his labor and expenses:

I have received from him (Ptolemaios) the wages (*katergon*) for the land and the expenses (*anelomata*). I therefore present to you the memorandum in order that you may transfer the three arouras to the name of Ptolemaios in the sowing-list of the said year and in the survey according to crops through the usual officials, as is appropriate.²²⁴

As Cuvigny notes, the compensation for the original tenant's investment of labor in the planting suggests that this transaction was made under special circumstances relatively late in the year.²²⁵ Since the third example was made in the month of May, it is impossible to judge which of the three times of year was typical for such transfers.²²⁶ In transfers of royal land there is no indication that the recipient needed to pay the original landholder even if it is conceivable that cessions of property actually concealed an informal or illicit sale of rights.

One could perhaps describe the customary tenure of royal land as a form of hereditary lease. A subgroup of the cultivators of royal land called "those who have leased hereditarily" (*memisthomenoi eis to patrikon*) appears in the royal decrees of 186 and 118 BCE.²²⁷ The decree of 118 BCE, which is more complete, mentions holders of temple (*hierai*) and private land (*idioktetos gē*) elsewhere, so the identification of hereditary lease with these categories based on this text is doubtful.²²⁸ Grenfell and Hunt interpreted the phrase as a reference to royal cultivators (*basilikoi georgoi*) whose cultivation rights passed from father to son, who spoke of the land as belonging (*hyparchein*) to them.²²⁹ Similarly, Youtie pointed out that the duration clause in Ptolemaic cessions of royal land, "for all time" (*epi ton*

hapanta chronon), was the same one used in cessions of katoikic land from the late Ptolemaic and early Roman period, and wondered whether the tenants had similar hereditary rights.²³⁰

While some plots of royal land were leased for fixed terms, the Kerkeosiris land surveys suggest that other tenancies could last indefinitely and be inherited, as long as the cultivators continued to pay their annual rents. Undivided plots were frequently cultivated in partnerships of two or more people, who were sometimes relatives.²³¹ For example, an entry in one land survey shows siblings registered to the same area of royal land, which seems to imply the same joint-inheritance practices that were discussed earlier in this chapter in relation to private landowners in the Nile Valley.²³²

The major difference was the peasants' inability to sell land using contracts of sale and to utilize the sophisticated legal mechanisms for enforcing property rights that were discussed above. Moreover, unlike private owners of land in Upper Egypt, women are not found in possession of royal land in the Fayyum. Peasants on royal land in the Fayyum apparently sought protection in village institutions, negotiating their land rights with local officials and their own community elders. They acted as an association with other male landholders. Land transactions accordingly have an informal character, as the peasants maintained traditional Egyptian customs of inheritance, conveyance, and sub-lease but were under the immediate supervision of royal officials. It is unclear how common it was for individual families of royal cultivators to work the same land for years or even across generations. Our evidence suggests a lot of variability in the length and security of tenure as well as cases of spontaneous selection of cultivators by officials for cultivating certain areas.²³³ There is a strong parallel here with the various modes of tenure within temple domains. Private land (*idioktetos gê*) belonged to the king only in a fiscal and administrative sense, while tenure patterns within the area directly under state management ranged from customary leaseholds (with only limited rights of

alienation), to fixed-term leases, to the first-hand involvement of officials in organizing production.

In the Roman period, cultivators of public land also formed associations headed by village elders.²³⁴ Most public land was divided among the public cultivators as individuals, as partnerships, or as associations of several families.²³⁵ There is one explicit example of long-term hereditary lease (*eis ta patrika*) on public land.²³⁶ As in the Ptolemaic period, village elders found tenants for land that was no longer being cultivated. Moreover, peasants on public land continued to enjoy the benefits of seed loans from the state granaries.²³⁷ Much of the older literature insisted that they were subject to centralized state control, which suppressed private property rights, and that redistributions were a form of forced lease. The assignment (*epimerismos*) of land in the Fayyum from one village to the corporation of public tenants of another village need not, however, necessarily have been disadvantageous to those communities.²³⁸ State officials sometimes assigned small plots of public land to private landowners, which remained an obligatory attachment to the land even when it was sold to new owners. However, other evidence suggests that some recipients of public land actually defended their rights to it.²³⁹

In Fayyum villages, the public cultivators periodically performed collective redistributions of public land. References to such redistributions within the community can be found in the duration clause of some sublease contracts, which date between the late first century CE and the late second century CE. All of them are from the Fayyum, including Theadelphia, Karanis, Tebtunis, and Soknopaiou Nesos. Typical clauses are that the lease or division of land is to last “for as long as the area of the village remains undivided,” which is the formula found in Theadelphia.²⁴⁰ In Karanis and Soknopaiou Nesos, the equivalent phrase is “for as long as he retains the cultivation (*georgia*).”²⁴¹ In Tebtunis, there is just one example, but it has generated the most discussion: “until the tenants’ communal leasing out (*koinê diamisthosis*) takes place.”²⁴²

Rostovtzeff points to the use of the same term, *diamisthosis*, for leasing out rights to imperial estates in Roman Egypt. There the central state auctioned the rights and sought to maximize its revenue. He concludes that Egyptian peasants' land rights were always precarious because they depended on the demands of state officials.²⁴³ However, it is highly doubtful that the leasing of rights for imperial estates to elite bidders was in any way equivalent to the local procedure of land redistribution. Hagedorn accepts the traditional interpretation that these texts refer to intervention by the state to reorganize local land tenure but remarks how costly and unnecessary it would have been to do so on a regular basis.²⁴⁴

Rowlandson offers the most convincing interpretation of these village redistributions and the allocation of public land. She likens the institutions in Egypt to those of other peasant societies that manage agricultural land communally by granting individual use rights under the authority of village elders.²⁴⁵ The flood sometimes gives capable tenants not enough land and gives other tenants more land than they can cultivate. Such variation could periodically necessitate sweeping redistributions in the interests of the villagers themselves. This is certainly more plausible than Rostovtzeff's model of despotic state intervention. Rowlandson's interpretation also helps to make sense out of the Ptolemaic evidence for royal land redistributions in Fayyum villages discussed above. Moreover, documents illustrating the allocation and sublease of public land in the Roman Fayyum suggest that peasants who obtained it did so voluntarily and were upset when others usurped their rights from them.²⁴⁶

Based on the Boserup-Demsetz model, land rights on public land in the Nile Valley should have been more private and exclusive than in the Fayyum. The communal institutions known from the Fayyum are indeed hardly attested in the Nile Valley. To illustrate how the level of privatization is correlated with regional differences shown in the previous chapter, it is useful to look at *de facto* rights to public land in Roman Egypt, where they are better attested.

Rowlandson has recently reviewed the evidence for the organization of public land and arrived at a similar conclusion.²⁴⁷ In the Nile Valley private landowners play a larger role in the cultivation of public land. The communal organization observable in the Fayyum is hardly attested in the Nile Valley, though one wishes there were village archives comparable to the one from Kerkeosiris.

Three major differences in public land tenure between the Fayyum and the Nile Valley stand out in Rowlandson's analysis. First, public tenants in the Fayyum generally did not own private estates but instead supplemented their incomes by leasing land on others' estates. By contrast, in the Nile Valley owners of private estates voluntarily undertook the cultivation of large areas of public land. Second, the cultivators of public land in the Fayyum belonged to village associations and called themselves public tenants. In the Nile Valley such designations are rarely attested, though there could be a bias in the nature of the sources. Third, women never belonged to associations of public tenants in the Fayyum and thus fail to appear as tenants of public land except when tiny parcels are compulsorily assigned to their private estates.

By contrast, women in the Nile Valley frequently inherited large areas of public land together with their private estates. A woman in Oxyrhynchus willingly took over the public land of her father, cultivating it along with her inherited private land for years until an additional tax on it made her wish to give it up. Only then did she complain, citing the legal exemption that women had from the compulsory cultivation of land.²⁴⁸ Rowlandson persuasively argues that compulsory cultivation cannot explain why private landowners, and especially women, who were exempt from such practices, held so much public land in the Oxyrhynchite nome. Certainly public land with its higher taxes and less secure property rights was not as desirable as private land. Nevertheless, landowners sometimes actively colluded with state officials to remove peasant cultivators and to have public land transferred to their own names.²⁴⁹

The most valuable source, but one that is rarely cited in

this connection, is the land survey of 47 CE from the village of Krokodilopolis in southern Egypt.²⁵⁰ As mentioned in [Chapter 3](#), it lists the landholdings of about 168 people, which amount to over 5,000 arouras, and thus provides a representative sample of the whole village. The text is relevant because it provides another confirmation of the differences in land tenure between the Fayyum and the Nile Valley. The most striking feature is that owners of private land cultivated 81% of the royal land in this village. Moreover, richer landowners tended to have more royal land than poorer landowners. The largest 10% of landowners held 21% of the royal land in the village. Women held 13% of the royal land, which is roughly proportional to the share of private land that women typically owned in Egyptian villages.²⁵¹ The size of the parcels of public land that were integrated into private estates is too large for them to be compulsory assignments, which were generally much smaller. This suggests that landowners deliberately infringed on public land in the expansion of their private estates. The similarities with what Rowlandson has shown for the Oxyrhynchite nome are remarkable.

The regional pattern of tenure on public land is thus consistent with the Boserup-Demsetz model of privatization and intensification. It shows a correlation with the differences in population density described in [Chapter 2](#). There are still unanswered questions about the relationship between private ownership and more customary forms of tenure on royal and temple land in the Ptolemaic period or on public land in the Roman period. It may be useful to compare modern peasant societies that have adopted communal institutions of land management and extensive cultivation strategies.²⁵² These systems have come under pressure in the twentieth century for privatization due to population growth and rising demand for agricultural investment. Likewise in Egypt, similar forms of land tenure attested during the eighteenth and nineteenth centuries gave way to virtually universal private ownership of agricultural land in the twentieth century. The long historical record from Egypt proves that there was no linear evolution of land rights from supposedly primitive communal forms to modern

private ones.

Conclusion

Rostovtzeff's conception of centralized state control over royal or public land was based on a mistaken interpretation of redistributive institutions. He overlooks their function within peasant communities for spreading the risks of unpredictable floods and excessive tax burdens. Recent scholarship does not follow Rostovtzeff in thinking that any peasant could lose his land when another peasant made a higher bid at a periodic state redistribution. It also recognizes the voluntary aspect of land transfers within these communities. However, what remains unchallenged is the facile notion that royal or public land was prevalent in the Greco-Roman Fayyum because the Ptolemies reclaimed it and kept it for themselves and because the Romans simply inherited this legacy from the Ptolemies. This interpretation assumes that the land-tenure regime in the Fayyum was more profitable to the Ptolemies than the land-tenure regime in the Nile Valley. The discussion of the fiscal regime in [Chapter 5](#) shows that rates and methods of taxation on royal land in the Fayyum were virtually identical to the taxation of private land in the Nile Valley. Informal transfers within peasant communities on royal land in the Fayyum generated no revenue, while private sales of land in the Nile Valley were taxable, so it is difficult to see why private conveyances as opposed to communal redistribution would be a disadvantage to the Ptolemaic state.

Despite the regional continuities, Roman rule did have a major impact on the land-tenure regime in the long run. By the early fourth century CE, all public land was treated as a form of private property, distinguished from other private land only by its higher taxation rate.²⁵³ Some of the steps in this process are already observable in the first two centuries of Roman rule. The most frequently cited is the improvement in the specification and enforcement of property rights through the clear distinction between private and public land and through the creation of metropolitan

property archives. This chapter has found that the differences between Ptolemaic and early Roman legal institutions have too often been exaggerated, to the extent that some historians have wrongly denied the existence of fully alienable land rights – that is, land that was heritable and vendible to virtually whomever one wished – before the Roman period. A market for land already existed and was not created by Roman reforms, even if they contributed to its expansion.

One possible explanation for the increasing importance of land ownership is that population growth or market integration raised the value of land, creating an economic justification for state authorities to auction off public land or at least to recognize *de facto* private rights on it. This would be in line with the Boserup-Demsetz model developed in the previous chapter, but the evidence for population growth from Ptolemaic to Roman Egypt is insufficient to test the hypothesis. Market integration is even harder to measure, but, as with population growth, all of the conditions for it were in place during the first two centuries of Roman rule. There were certainly changes in the Fayyum: the emergence of private estates, the expansion and intensification of agriculture, and urbanization. Then there was the economic and demographic collapse in the third century CE, which forced villages and agricultural land on the perimeter of the Fayyum to be abandoned.²⁵⁴ The causes are still unknown, but one wonders whether soil salinization may have been a factor. If so, that would suggest that intensification eventually crossed a threshold of ecological sustainability. Even at the height of its prosperity in the second century CE, the marginality of the Fayyum can be seen in the extent of public land there, which contrasts with the more densely populated Nile valley.

Neither land privatization nor demographic/economic growth can fully explain the social and economic transformation of Egypt from the Ptolemaic to the Roman period. The reason why Ptolemaic land markets did not lead to the formation of large estates and powerful landowners cannot be identified in either of these factors. As the next

chapter aims to demonstrate, Roman reforms to taxation were more significant than legal changes to the land-tenure system for the transformation of the agrarian economy. Under the Ptolemies, on the other hand, because private land was subject to a smothering fiscal regime, elites were better off seeking royal privileges through state and temple service than investing in agricultural land.

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- ¹ The articles in Bowman and Rogan (1999) nicely illustrate the diversity.
 - ² Rowlandson (1996: 41–2); Bowman and Rathbone (1992: 109–10; 112); Jördens (2009: 107–8).
 - ³ Bingen (2007 [1978b]: 211–12; 2007 [1984]: 193, 203–5).
 - ⁴ Cf. Bagnall (2007: 8); Manning (2003: 83, 187–93).
 - ⁵ For institutional versus individual landholding, see Haring (1998: 77–80); cf. Manning (2003: 79, 81).
 - ⁶ Römer (1994: 302–56).
 - ⁷ Lippert (2008: 32).
 - ⁸ E.g. Papyrus Valençay I, Katary (1989: 207–16); much of the evidence for this type of land is from the Third Intermediate Period (c. 1070–664 BCE), cf. Gasse (1988: 38, 212–4); Menu (1998 [1989]: 193).
 - ⁹ Gardiner (1948: 75, 206); for reservations, cf. Menu (1970: 132–4).
 - ¹⁰ Spiegelberg (1917: 116); Gardiner (1933: 22) equates *ḥnmḥ.w* with Ptolemaic *idioktetos gē*, as do Gauthier (1936: 67) and Katary (1989: 211).
 - ¹¹ Vandorpe (2000b: 172–4; 2006: 167).
 - ¹² The Inscription of Mes = Gardiner (1905); Allam (1989); Katary (1989: 220–2).
 - ¹³ Helck (1963: 70–1); Katary (1989: 223–5); Lippert (2008: 62); for the use of land registers in the New Kingdom to secure property rights, see Seidl (1982); Allam (1994a: 1–2; 1994b: 36–40; 2010: 15–18); Römer (1994: 341–2); Haring (1998: 80–82).
 - ¹⁴ Namely, P. Siut and P. Erbstreit; for undivided ownership among heirs in Mesopotamia, see van der Spek (1995: 176–7); cf. Erdkamp (2005: 66–8).
 - ¹⁵ Meeks (1979) and Römer (1994: 315–30) for private donations; Menu (1997: 248–59; 1998 [1988]) for land

sales.

- 16 Sheshon stele (c. 950 BCE), Blackman (1941); Apanage stele, Menu (1998 [1989]); the dossier of Petiesis, Menu (1997: 268–75); cf. Menu (1997: 250–5, 257–8).
- 17 K. Baer (1962).
- 18 Menu (1997), whose statement (on 260), “the king and the temples remain at the highest level the only owners of land, of which they grant the use,” seems to be void of any practical significance; cf. Seidl (1962: 111).
- 19 Menu (1998 [1989]: 196) may imply this since evidence of permission is not discussed in her citations.
- 20 Menu (1970: 132–4): during the New Kingdom, the landholder had only the “rights of use” (*domaine utile*) while the king or temple had ultimate ownership or “eminent domain” (*domaine éminent*), while during the Third Intermediate Period (c. 1070–664 BCE) there was “an evolution that leads in a quasi-obligatory fashion towards freehold ownership (*propriété libre*) of land” (133).
- 21 Donker van Heel (1998); Hughes (1952).
- 22 Donker van Heel (1998: 91–5).
- 23 Cf. Donker van Heel (1998: 94–95).
- 24 P. Louvre 7851 recto (c. 665 BCE) and P. Louvre 7851 verso (c. 665 BCE) = Donker van Heel (1999); P. Louvre 7860 (c. 574 BCE) = Hughes (1952); all of which are from Thebes.
- 25 Donker van Heel (1998: 96).
- 26 P. Bib. Nat. 215, verso, col. 10–12 = Spiegelberg (1914).
- 27 Lippert (2004: 172–3; 2008: 85–6). The best examples are the Hermopolis Legal Code = Mattha and Hughes (1975), reedition Donker Van Heel (1990), new German translation Stadler (2004), and the so-called *Zivilprozeßordnung* = Spiegelberg (1929) with Lippert (2003); the recently published didactic legal text, Lippert (2004), also cites specific laws.
- 28 Lippert (2004: 167–70; 2008: 86–7).
- 29 Hermopolis Legal Code, see n. 27.
- 30 Hermopolis Legal Code, col. 1, lines 1–32, col. 2, lines 1–11 = Donker van Heel (1990: 3–15); model lease: col. 2, lines 27–32, col. 3, lines 1–2 = Donker van Heel (1990:

21–5).

- 31 Donker van Heel (1998: 95–6).
- 32 Hermopolis Legal Code: col. 8, lines 30–3, col. 9, lines 1–26 = Donker van Heel (1990: 93–105); Lippert (2008: 125); cf. Pestman (1969b) and Manning (2003: 221–4) on Egyptian inheritance law.
- 33 P. Siut: Thompson (1934: xii–xviii); Manning (2003: 201–5); a similar Ptolemaic legal case over land inheritance is attested in the dossier known as P. Erbstreit.
- 34 Manning (2003: 79–83).
- 35 Sales of royal land: P. Hausw. 1 (265 BCE), P. Hausw. 3 (245 BCE), P. Hausw. 7 (243 BCE) and P. Hausw. 10 (264 BCE); sales of temple land: P. Hausw. 1 (265 BCE), P. Hausw. 3 (245 BCE), P. Hausw. 5 (219 BCE), P. Hausw. 17 (213 BCE). Other land sales in this dossier give no explicit royal or temple status.
- 36 Meeks (1972); Manning (2003: 74–9, with English translation 245–56).
- 37 On this topic for pharaonic Egypt, see Haring (1998) and, especially, Eyre (2004).
- 38 Cf. Haring (1998: 79–80).
- 39 See the discussion of temple land below, pp. 131–41.
- 40 For this title, linking certain professional groups to the temple, see Manning (1994).
- 41 P. Hausw. 18 (212 BCE; Apollonopolite). On the designation “Greek born in Egypt”, see Oates (1963); Vandorpe (2008: 90).
- 42 The sources are listed in Manning (2003: 267–76); in all calculations that follow, only conveyances of agricultural land are included, not empty lots, gardens, or tombs; P. Hausw. 16 (221–220 BCE; Apollonopolite), an auction agreement is also excluded; sons are assumed to have the same status as their fathers; parties are counted per transaction, so duplicate attestations of a transaction (such as a cession accompanying a sale) are ignored but the same persons are counted more than once if they appear in different transactions.
- 43 Without Hauswaldt (all land): 40% non-temple status, 31% women, and 29% temple status.
- 44 P. Schreibertrad. 30 and 115 (184 BCE; Diospolite).

- 45 Clarysse (1979a: 732–5); Johnson (1986: 73–77).
- 46 For this institution, see Pringsheim (1949); Zauzich (1971); Manning (1999a).
- 47 On the sale of his properties, see Clarysse (2003: 23) *contra* Bogaert (1998/1999: 90–1).
- 48 P. Eleph. 19 (222 BCE; Apollonopolite?); cf. P. Eleph. 24 (c. 223/222 BCE; Apollonopolite?).
- 49 Clarysse (2003); Manning (2003: 83–5; 2010: 117–20).
- 50 P. Hausw. 16 (221/220 BCE; Apollonopolite).
- 51 P. Eleph. 14 (223/222 BCE; Apollonopolite?) = W. Chr. 340 = Sel. Pap. II 233.
- 52 P. Eleph. 14, lines 22–23: κυριεύουσιν δὲ καθ’ ἃ καὶ οἱ πρῶτον κύριοι ἐπέκτηντο; cf. Pringsheim (1949: 333–4 and *passim*) and Rupprecht (1994: 236) for the language of full legal ownership here.
- 53 P. Eleph. 14, line 4; Seidl (1962: 111) *contra* Rostovtzeff (1910: 26–8); Wilcken's comments on W. Chr. 340; Taubenschlag (1955: 266–9); Maresch (2009: 127 n. 13, 129).
- 54 P. Schreibertrad. 30 and 115 (184 BCE; Diospolite), line 4; P. BMFA 38.2063b (175 BCE; Dendara) = Parker (1964); P. BM 10591 = P. Siut (160s BCE; Asyut), recto, col. VI, lines 16–17 with comments by Zauzich (1990: 161–2).
- 55 Manning (1999a: 281).
- 56 UPZ II 220–1 (130 BCE; Diospolite); Swarney (1970: 39); cf. Haensch (2008: 85–6) for continuity into the Roman period.
- 57 Manning (1999a: 280–1).
- 58 SB XXIV 15972 (c. 190 CE; Lykopolis); McGing (1997: 299–310); cf. Clarysse (1979b: 103); Pestman (1995: 121–2); Manning (1999a: 281 n. 23).
- 59 Manning (1999a: 281).
- 60 Manning (1999a: 282).
- 61 Vantorpe (2004).
- 62 For example, P. Grenf. II 15 = W. Chr. 106 (139 BCE; Latopolite) and P. Lond. III 882 = M. Chr. 154 (101 BCE; Diospolite).
- 63 P. Haun. inv. 407 = Christensen (2002), line 294; see Chapter 3, pp. 80–3.
- 64 Vantorpe (2008: 94, 102–3).

- ⁶⁵ Vandorpe (2008: 89); Clarysse and Thompson (2006: 157–9) show that Persian status, like Greek status, exempted one from the one-obol addition to the poll tax in the third-century BCE; perhaps as importantly, being inscribed under an ethnic designation meant not being inscribed under an occupational heading, which may have had further fiscal advantages.
- ⁶⁶ Vandorpe (2008: 90–8), with discussion of the previous literature on this title.
- ⁶⁷ See below.
- ⁶⁸ The largest of these with over 100 texts is that of Peteharsemtheus son of Panobchounis: Pestman (1965); Lewis (1986: 139–52, esp. 141) notes that his family “shows many signs of affluence”; cf. Vandorpe (2008: 96–7).
- ⁶⁹ Priests: e.g. P. Lond. III 676 (100 BCE; Pathyris); P. Lond. III 678 (99/98 BCE; Pathyris); P. Lond. III 1206 (99 BCE; Pathyris); P. Strasb. II 89 (99 BCE; Pathyris); P. Lond. III 883 (88 BCE; Pathyris). No status for the seller: e.g. P. Strasb. II 81 (115 BCE; Pathyris); P. Lond. III 882 = M. Chr. 154 (101 BCE; Diospolite); P. Adler 20 (98 BCE; Pathyris); the status of the buyer is more frequently omitted, but this may have been a scribal choice.
- ⁷⁰ E.g. P. Adler 3 (112 BCE; Pathyris), col. 2, lines 10–12; contrast Maresch's (2009: 124–6) interpretation of the same evidence, where he insists that their ability to sell the land, mortgage it, give it as a dowry, and leave it in a will does not mean it was private property and tells us “nothing about the ownership (*Besitzverhältnis*)” (126 n. 12) because the landholders were obliged to pay “rent” (*ekphorion*) to the state; for the meaning of *ekphorion*, see Chapter 5, pp. 165–72.
- ⁷¹ P. Grenf. II 33 (100 BCE; Pathyris); for the use of *parachoresis* in conveyances of objects over which one lacks full legal title and rights of ownership, see Rupprecht (1984).
- ⁷² E.g. P. Strasb. II 81, lines 7, 20.
- ⁷³ E.g. P. Lips. I 1 (104 BCE; Pathyris), lines 5–6: πέμπτην μερίδα γῆς σιτοφόρου...[location specified]
< ὑπαρχούσης αὐτῷ > καὶ τοῖς ἀδελφοῖς ἀδιαίρετου.

- 74 P. Lond. III 604 A + B (47 CE; Krokodilopolis, Panopolite?); see discussion in [Chapter 3](#), pp. 96--9, and below.
- 75 Rathbone (2007b: 701): “The Roman government... eventually removed the residual restrictions to a free market in private farmland.”
- 76 *Gnomon of the Idios Logos* §70 = BGU V 1210, 174–6, English trans. Johnson ([1936](#): 711–17); cf. Jördens ([2009](#): 478).
- 77 Pringsheim ([1949](#)).
- 78 For an increase in private land due to public auctions: Rostovtzeff ([1910](#): 97–9); for fiscal incentives to invest in private estates, see [Chapter 5](#).
- 79 Bowman and Rathbone ([1992](#): 121); Rathbone ([2007b](#): 701 n. 14); Maresch ([2002](#): 239); for the privileges of the gymnasial group in Roman Egypt, see [Chapter 7](#), pp. 266--72.
- 80 P. Mich. VII 260–1 (35 CE; Tebtunis, Arsinoite).
- 81 E.g. P. Köln V 227; Rowlandson ([1996](#): 46–8); see further below.
- 82 Cf. Rupprecht ([1984](#)).
- 83 The *Grundbuch* hypothesis held that ownership was established only by the act of registration: Eger ([1909](#): 202–4); Mitteis ([1912](#): 90–112). Later scholars have shown that registration was merely a form of publicity for securing rights: Woess ([1924](#)); Wolff ([1978](#): 222–55, esp. 245–6).
- 84 Seidl ([1982](#)); Allam ([1994b](#): 32–40; 2010).
- 85 See above, notes 12–13.
- 86 Hermopolis Legal Code, col. 1, line 10 = Donker van Heel ([1990](#): 3); Lippert ([2008](#): 145–6).
- 87 On legal plurality, see Wolff ([1960](#); [2002](#): 29–34); cf. Mélèze-Modrzejewski ([2001](#)) and Cowey and Maresch ([2001](#): 10–18) for Jewish legal traditions in Ptolemaic Egypt.
- 88 E.g. P. Petr. II 21 (b)-(d), col. 1, lines 9–31 = M. Chr. 28 (232/231 BCE; Krokodilopolis?); BGU XIV 2367 (III cen. BCE; Alexandria?) may record actual provisions of the legislation, which only relate to Greek contracts. P. Gurob. 2, lines 9–10 (c. 225 BCE; Gurob, Arsinoite),

shows that it also specified the appointment and procedures of judges for the Greek court (*dikasterion*); Wolff (1960: 205–7).

- ⁸⁹ Pestman (1983a); Lippert (2004: 149–78); Wolff (1960: 200–1, 205–17; 1962: 48–53); Wolff (1960: 205–17) and, more radically, Manning (2008: 98–100) suggest implausibly that the surviving Egyptian law codes were innovations of Ptolemy II's legislation rather than being based on earlier compilations.
- ⁹⁰ P. Tebt. I 5 (118 BCE; Arsinoite), lines 207–20; Lippert (2008: 86–7).
- ⁹¹ Sauneron (1954); Quaegebeur (1993: 205–8).
- ⁹² Part of the verso of the so-called *Zivilprozeßordnung*; see Seidl (1963); Lippert (2008: 180); for the purchase of priestly offices, see Chapter 6, pp. 212–27.
- ⁹³ Arlt (2008; 2009; forthcoming).
- ⁹⁴ Pestman (1994: I 26–7, 30–1); Muhs (2005a: 93 n. 1).
- ⁹⁵ Depauw (2003: 66–8).
- ⁹⁶ BGU XIV 2367 (III cen. BCE; Alexandria?).
- ⁹⁷ Wolff (1978: 57–64).
- ⁹⁸ Depauw (2003).
- ⁹⁹ P. Hal. 1, lines 242–59 (III cen. BCE; Alexandria); Yiftach-Firenko (forthcoming).
- ¹⁰⁰ Wolff (1948); Pestman (1978; 1985a); *katagraphê* is attested mainly in texts from the end of the second century BCE such as P. Adler 13 (100 BCE; Krokodilopolis, Pathyrite) but BGU XIV 2398 (213/212 BCE; Tholthis, Oxyrhynchite) seems to refer to the same procedure in the third century BCE; cf. Yiftach-Firenko (forthcoming). Allam (2010), rather tenuously, stresses the continuity of *katagraphê* from pharaonic Egypt based on evidence for land registration.
- ¹⁰¹ Wolff (1948: 27–8, 58–9).
- ¹⁰² Wolff (1948: 57–64); Yiftach-Firenko (forthcoming); cf. Pestman (1985a: 43) for an intriguing Ptolemaic reference to a *bibliothekê* archiving a contract.
- ¹⁰³ Pestman (1985a: 10).
- ¹⁰⁴ Kramer (1991: 16–34); Muhs (2005a: 95–6); cf. Wolff (1978: 12, 36–7, 38 n. 20); Boswinkel and Pestman (1982: 25) also note that there were multiple village

grapheia in the Hermopolite nome in the second century BCE.

- ¹⁰⁵ Parker (1974); De Cenival (1987); Muhs (2009; 2010).
- ¹⁰⁶ P. Par. 65 = Sel. Pap. II 415 (145 BCE; Memphis); UPZ II 162 (117 BCE; Thebes) = P. Tor. Choach. 12; Wilcken (1927: 596–621); Wolff (1978: 36–40); Pestman (1985b); Kramer (1991: 22–5) corrects previous misconceptions about this decree's relationship to the registration of Greek contracts.
- ¹⁰⁷ Wolff (1948: 59–60).
- ¹⁰⁸ Cf. P. Tebt. I 5 (c. 118 BCE), lines 207–20.
- ¹⁰⁹ Youtie (1975).
- ¹¹⁰ Husselman (1970); Muhs (2005a: 96–104).
- ¹¹¹ Lewis (1993a); cf. Depauw (2003: 104–5).
- ¹¹² On the property archive, see Eger (1909); Mitteis (1912: 90–112); Woess (1924); Taubenschlag (1955: 167–73); Wolff (1978: 222–54); Cockle (1984); Burkhalter (1990); Maresch (2002); Jördens (2010).
- ¹¹³ P. Mich. III 179 (before 64 CE; Oxyrhynchus) is sometimes regarded as a terminus post quem merely because it refers to *bibliophylakes* rather than to *bibliophylakes enkteseôn*; Wilcken (1937: 230); Taubenschlag (1955: 167); Lippert (2008: 146); cf. Haensch (2008: 94–6) for Ptolemaic antecedents.
- ¹¹⁴ P. Fam. Tebt. 14, 15, 17, and 24; van Groningen (1950: 97–108).
- ¹¹⁵ See Chapter 6, pp. 242–3.
- ¹¹⁶ Van Groningen (1950: 107); Lewis (1997: 17) lists P. Giss. I 58 (112 CE), where a wealth qualification of at least one talent is required to become keeper of the property archive, as the first certain attestation of compulsory appointment but suggests that the Arsinoite case may illustrate compulsion already in 109 CE.
- ¹¹⁷ P. Oxy. II 237, col. 8, lines 27–43 (186 CE; Oxyrhynchus); trans. Grenfell and Hunt, Sel. Pap. II 219.
- ¹¹⁸ Woess (1924: 98–125).
- ¹¹⁹ Burkhalter (1990).
- ¹²⁰ Woess (1924: 339–51); Wolff (1978: 222–55).
- ¹²¹ Maresch (2002: 239–45); Jördens (2010: 171) doubts that this was the primary factor driving its development.

- ¹²² P. Fam. Tebt. 24, lines 106–11.
- ¹²³ Kunkel (1928); Wolff (1948: 63–4); Préaux (1939: 463–80); Crawford (1971: 53–8); Oates (1995).
- ¹²⁴ Monson (2007d: 374–5).
- ¹²⁵ Eger (1909: 35, 39–42); Mitteis (1912: 111–12); Woess (1924: 89–97).
- ¹²⁶ Woess (1924: 92–4); Maresch (2002: 238–9).
- ¹²⁷ For Maresch (2002: 239), for example, this suggests that katoikic land did not become fully private property.
- ¹²⁸ Rostovtzeff (1909: 626); Wilcken (1912: 300); Johnson (1936: 639); Tomsin (1969: 273–4); Evans (1961: 243); Whitehorne (1980: 220); Stead (1984: 1047); Alston (2002: 199 n. 14).
- ¹²⁹ Monson (2005).
- ¹³⁰ O'Connor (1983: 226–7).
- ¹³¹ Katary (1989: 222).
- ¹³² P. Receuil 10 (119 BCE; Diospolite).
- ¹³³ Cf. P. Bingen 59 (33 CE; Tebtunis, Arsinoite), line 12, which records a 93-year hereditary (*eis ta patrika*) lease of public land (*demosia edaphê*); see also the Roman examples of hereditary lease of temple land discussed below.
- ¹³⁴ Gasse (1988: 211–22); Vleeming (1993: 55–9); the distinction is already found on temple estates in the Wilbour Papyrus from the New Kingdom; cf. Römer (1994: 334).
- ¹³⁵ Vleeming (1991: 222; 1993: 57): “formerly in the hand of” (*wn m-ḏr.t*); see the discussion below of the Demotic phrase, “what is before him from the fields (formerly) of” (*ntl l-lr-ḥr = f n n³ 3ḥ.w*), and Greek με(μερο)μένον ἀπο τῆς (πρότερον), “allotted to him from the land formerly of.”
- ¹³⁶ Van den Boorn (1988: 153–7).
- ¹³⁷ P. Loeb 4–7, 12, 22, 24, 58 (c. 310 BCE; Akoris, Hermopolite).
- ¹³⁸ P. Zauz. 73 = Vinson (2004); Zauzich (pers. comm.) remarks that the editor misread the sign for “in the hand of” (*n-ḏr.t*). It designates the relationship of the teams of cultivators and animals to the land just as in the 10th-century-BCE surveys of the estates of Amun; cf. Gasse

- (1988: 211–22) and Vleeming (1993: 55–9).
- 139 P. Tebt. I 62, lines 10–11, and P. Tebt. I 63, line 18; Otto (1905: 281, 417); Crawford (1971: 99).
- 140 P. Tebt. I 6, lines 30–2; Keenan and Shelton (1976: 7).
- 141 P. Lond. VII 2188 (148 BCE; Hermonthite). Whereas the Pathyrites describe the land as belonging to their temple (ὑπαρχούσης ἱερᾶς γῆς τῷ προκειμένῳ ἱερῷ), the Hermonthites describe it as land of the temple of the living Bouchis bull in Hermonthis (ἐν τῇ ἱερᾷ γῇ τοῦ ἱεροῦ ζώιου Βούχιος θεοῦ μεγάλου), lines 36, 202, 287; cf. lines 48, 243.
- 142 P. Lond. VII 2188, col. 3, lines 47–51.
- 143 For Ptolemaic hieroglyphic steles recording royal donations of land to the Bouchis bull, see Mond and Myers (1934: II 4–12); cf. comments to P. Lond. VII 2188, line 49, p. 289.
- 144 P. Lond. VII 2188, col. 5, lines 132–3, 157–8, with editor's note, p. 292.
- 145 P. Lond. VII 2188, col. 5, lines 134–41.
- 146 P. Grenf. II 33 (100 BCE; Pathyris).
- 147 Pestman (1969a: 146–8); his attempt to match this distinction with Greek designations for temple land is less convincing; cf. the comments to P. Lond. VII, lines 35–8, p. 288.
- 148 See Chapter 3.
- 149 P. Tebt. Botti 1 = Botti (1956).
- 150 P. Cair. II 30631 (86/85 BCE; Tebtunis).
- 151 See Pestman's comments on P. Receuil 10 (119 BCE; Diospolite), vol. 2, p. 102.
- 152 Translation modified from Hughes (1952: 92 n. 93).
- 153 P. Cair. II 30630 (89 BCE; Tebtunis).
- 154 For hereditary lease, see note 159 below; for sales of privately owned temple land, see note 165.
- 155 P. Tebt. II 302 (71/72 CE; Tebtunis, Arsinoite).
- 156 Stein (1950: 17–18); Capponi (2005: 180).
- 157 Wilcken (1899: 655–663); Wallace (1938: 240–1); Lichtheim (1957: 33–36); Rowlandson (1996: 30).
- 158 P. Tebt. II 311 (134 CE), line 15 and P. Tebt. II 390 (167 CE?) with editor's note, P. Tebt. I, p. 92.
- 159 Hereditary lease of temple land: P. Tebt. II 309 (116/117

- CE; Tebtunis, Arsinoite); P. Tebt. II 310 (186 CE); P. Tebt. II 311 (134 CE) is presumably a sublease of temple land on hereditary lease; P. Tebt. II 390 (167 CE?) is a mortgage on the lease; P. Harris I 138 (92 CE; Oxyrhynchus), col. 1, lines 19–25, where a woman transfers a hereditary lease of temple land to her grandson; P. Petaus 44 (185 CE; Arsinoite), lines 13–14, mentions land on hereditary lease in connection with other temple land.
- ¹⁶⁰ P. Tebt. II 309 (116/117 CE) and P. Tebt. II 310 (186 CE) are examples of the surrender of such leases.
- ¹⁶¹ See [Chapter 6](#), p. 223.
- ¹⁶² P. Tebt. II 302, line 17; cf. BGU IV 1200 (29 CE; Busiris, Herakleopolite).
- ¹⁶³ Rowlandson ([1996](#): 61–2); Glare ([1993](#): 72–3).
- ¹⁶⁴ Cf. P. Berl. Leihg. I 5 (158/159 CE; Theadelphia), lines 10, 15–16; P. Petaus 44 (before 185 CE; Arsinoite), lines 26 and 37.
- ¹⁶⁵ P. Mich. V 256 (29/30 CE), 254–5 (30/31 CE), 260–1 (35 CE), 263 (35/36 CE), all from Tebtunis.
- ¹⁶⁶ P. Mich. V 263 (35 CE); cf. P. Mich. V, pp. 18–20.
- ¹⁶⁷ P. Mich. V 260–1 (35 CE; Tebtunis).
- ¹⁶⁸ Wallace ([1938](#): 59–61); Schubert ([1990](#): 164); cf. P. Ryl. II 188.
- ¹⁶⁹ P. Mich. V 260–1 (35 CE; Tebtunis); P. Mil. Vogl. IV 209 (108 CE; Tebtunis); BGU II 483 (II cen. CE; Arsinoite); P. Petaus 11 (184 CE; Ptolemais Hormou, Arsinoite) is the division of property, including temple land, belonging to a village scribe.
- ¹⁷⁰ P. Mich. V 256 (29/30 CE; Tebtunis); BGU IX 2023 (198/201 CE; Karanis); O. Mich. I 24, Youtie ([1940](#): 199–201); cf. BGU IX p. 21; Wallace ([1938](#): 20).
- ¹⁷¹ Rowlandson ([1996](#): 88–90); Wallace ([1938](#): 20–1).
- ¹⁷² P. Diog. 26 (158 CE; Philadelphia?).
- ¹⁷³ E.g. Schubert ([1990](#): 165).
- ¹⁷⁴ Crawford ([1971](#): 96); see, e.g., P. Tebt. I 62 (119/118 BCE; Kerkeosiris), lines 7–11.
- ¹⁷⁵ The editors of P. Tebt. II (p. 92, cf. p. 177 n. 5) propose a distinction between the *demosia gē hiereutikē* given out on hereditary lease by the temple (e.g. P. Tebt. II 311

and 390) and the privately owned *hiera gê* (e.g. P. Tebt. II 363 and 346). The rates assessed on temple and katoikic land in P. Tebt. II 363 suggest that they were *kathekonta* rather than *ekphoria* and that the temple land was equivalent to other private land.

- 176 P. Berl. Leihg. I 5 (158/159 CE; Theadelphia, Arsinoite), lines 10, 15–16; similarly in P. Petaus 44 (before 185 CE; Arsinoite), lines 26 and 37.
- 177 Rostovtzeff (1910: 90).
- 178 Wilcken (1912: 300–1); Wallace (1938: 4, 14); Evans (1961: 241–4); Stead (1984); Rowlandson (1996: 62).
- 179 Cf. P. Oxy. XII 1446 (c. 161–210 CE; Arsinoite).
- 180 Wallace (1938: 239–41); Stead (1984).
- 181 P. Mich. V 263 (35 CE).
- 182 A similar division of property among heirs, including both temple and katoikic land, is P. Petaus 11 (184 CE; Ptolemaios Hormou).
- 183 P. Lond. III 604 A (47 CE; Krokodilopolis, Panopolite).
- 184 Jördens (2009: 343).
- 185 Bowman (1985: 148–9); Rowlandson (1996: 68–9, 97–101).
- 186 Boserup (1965); Migot-Adholla et al. (1991); Platteau (1996).
- 187 Platteau (2003).
- 188 Hesselning (1998: 177–81).
- 189 Lehner (2000: 296, 315–18); Eyre (2004: 165–70).
- 190 Park (1992: 105).
- 191 Park (1992; 1993); cf. Butzer (1976: 81–98).
- 192 Park (1992: 98–105).
- 193 Park (1992: 93–7).
- 194 G. Baer (1969: 17–26).
- 195 Cuno (1992: 19–25).
- 196 Ghalwash (1998: 121–39).
- 197 Crawford (1971: 110–2); Verhoogt (1998a: 107–8); Rathbone (2001: 1113).
- 198 Nugent and Sanchez (1998).
- 199 Rostovtzeff (1910: 49–53).
- 200 E.g. P. Tebt. I 61(b), 21–2 (118/117 BCE; Kerkeosiris); for discussion see Keenan and Shelton (1976: 7). The terms are used again in a royal decree (P. Tebt. I 6, lines

30–2) about temple revenues, where those who have leased (*memisthomenous*) temple land are distinguished from those who have seized it illicitly without contracts (*biazomenous aneu synallaxeôn*).

- 201 P. Cair. II 31073 A (240 BCE; Tanis, Arsinoite) = Monson (2007a), col. 2, lines 3–4, “for the registration of the men who leased in the village and the cultivators” is the heading for the summary of the (presumably royal) land in the village; col. 1, lines 11–14, lists by name perhaps eight individuals as “men who leased land in the village” in year 8, while col. 3, line 22, reports a total of 90 “cultivators”.
- 202 Keenan and Shelton (1976: 7); Rowlandson (1985: 338–41); cf. P. Bürgsch. 1–6.
- 203 P. Count 2, lines 146, 192; cf. San Nicolò (1913: 157–78).
- 204 Tomsin (1952a); Bonneau (1993b); Allam (2002).
- 205 P. Lond. VII 1954–5 (257 BCE; Philadelphia, Arsinoite); Rostovtzeff (1922: 73–4); Tomsin (1952a: 99–100).
- 206 P. Lille Dem. I 32 (264/3 BCE; Arsinoite).
- 207 The Kerkeosiris material in P. Tebt. I and IV remains the most extensive; in addition to P. Cair. II 31073 there are unpublished Demotic land registers in Stanford, Heidelberg, Berlin, and other collections that require further study; cf. Kaplony-Heckel (1994: 191; 1998).
- 208 Shelton (1975; 1976: 119–21) shows that Ptolemaic attestations of the term in connection with royal land are lacking. Its meaning in the context of land redistribution in Roman Egypt is discussed below. Cf. Eyre (2004: 167).
- 209 P. Cair. II 31073 A + B = Monson (2007a).
- 210 Demotic $nt\bar{i} \text{ } \bar{i} \text{ } \bar{i} \text{ } \bar{r} \text{ } \bar{h} \text{ } \bar{r} = f \text{ } \bar{h} \text{ } n \text{ } n^3 \text{ } rmt.w \text{ } tmy$.
- 211 Demotic $r.d\bar{i} = f \text{ } (n) \text{ } n^3 \text{ } rmt.w \text{ } tmy$, “what he gave to the village men”; cf. P. Count 2, lines 146 and 192: “the men of the corporation of the village” ($n^3 \text{ } rmt.w \text{ } \bar{h} \text{ } tmy$).
- 212 Demotic $nt\bar{i} \text{ } \bar{i} \text{ } \bar{i} \text{ } \bar{r} \text{ } \bar{h} \text{ } \bar{r} = f \text{ } n \text{ } n^3 \text{ } \bar{h} \text{ } w$, “what is before him from the fields of,” and Demotic $r.d\bar{i} = f \text{ } (n) \text{ } r.d\bar{i} = f \text{ } (n)$, “what he gave to.”
- 213 P. Tebt. IV 1103 (116/115 BCE; Kerkeosiris, Arsinoite), lines 17, 34, etc.: με(μερισμένον) ἀπο τῆς (πρότερον).
- 214 P. Petr. III 98 (III cen. BCE; Arsinoite), from the northern

- Fayyum, resembles the Demotic land survey in showing both additions and deductions from the previous year.
- 215 P. Tebt. IV 1103; Shelton (1976: 118, n. 20) lists each example, but those on lines 93, 180, and 227 appear to be mistaken, making a total of thirty-one rather than thirty-four transfers, thirty of which have complete data.
- 216 P. Petr. III 103 = II 30(b) (III cen. BCE; Arsinoite) may be an exception, but its nature is unclear.
- 217 P. Tebt. IV 1103, lines 115–6.
- 218 P. Cair. II 31073 A, recto col. 6, line 8.
- 219 Shelton (1976: 119).
- 220 Rowlandson (1985: 334–6); cf. P. Tebt. I 42 (c. 114 BCE; Tebtunis, Arsinoite), P. Tebt. III.1 805 (after 113 BCE; Oxyrhyncha, Arsinoite).
- 221 Rupprecht (1984).
- 222 P. Iand. VII 134 (83 BCE; Euhemeria, Arsinoite), lines 3–16.
- 223 Crawford (1971: 24–8); Verhoogt (1998b: 142–8).
- 224 P. Tebt. III.1 808 (151 or 140 BCE; Tebtunis), lines 6–14.
- 225 Cuvigny (1985: 52–4)
- 226 PSI XIII 1316 (125 BCE; unknown provenance).
- 227 P. Köln VII 313 A = C. Ord. Ptol. 34 (186 BCE), line 17 [restored]; P. Tebt. I 5 (118 BCE) = C. Ord. Ptol. 53 (118 BCE), line 12. According to the latter, those on hereditary lease who had sureties were not entitled to the remission of rent and tax arrears granted to other royal cultivators; for the exaction of rent arrears from the sureties of royal cultivators, cf. P. Tebt. I 61(b) 377.
- 228 P. Tebt. I 5, lines 12 (*eis patrikon*) and 111 (*hierā* [restored] and *idioktetos gē*); *contra* Rostovtzeff (1910: 21–8); Wilcken (1912: 285–6); Préaux (1939: 166, 185, 496); Taubenschlag (1955: 266–9).
- 229 Comments on P. Tebt. I 5, line 12, p. 32; for *hyparchein*, see P. Tebt. I 42 (c. 114 BCE; Tebtunis, Arsinoite), line 10, mentioning a sublease of royal land; cf. Shelton (1989: 206 n. 23); for a Roman sublease of public land on hereditary lease (*eis ta patrika*), see P. Bingen 59 (33 CE; Tebtunis, Arsinoite).
- 230 Youtie (1935: 282); cf. Rowlandson (1985: 336–7).
- 231 Keenan and Shelton (1976: 4–8); Shelton (1976: 114–19,

- esp. 117–18).
- 232 P. Tebt. IV 1103 (116/115 BCE; Kerkeosiris, Arsinoite), lines 95–102.
- 233 For example, P. Tebt. I 61(b) (118/117 BCE: Kereeosiris), lines 351–80.
- 234 Tomsin (1952b).
- 235 Rowlandson (2006); Hennig (1967: 8–11).
- 236 P. Bingen 59 (33 CE; Tebtunis, Arsinoite); cf. P. Oxy. XLII 3047 (245 CE; Oxyrhynchus), col. 32, line 39, which presumably refers to public land as well.
- 237 P. Lond. II 256 = W. Chr. 344 (11 CE; Arsinoite) with Wilcken's comments, W. Chr., p. 407; English translation, Johnson (1936: 461–2, text 291).
- 238 For this institution, see Poethke (1969).
- 239 Jördens (2009: 464–8).
- 240 Hagedorn (1986); cf. P. Iand. IV 52 (96 CE), lines 8–10; P. Laur. II 30 = SB XXII 15485 (early II cen. CE), lines 12–13; P. Flor. I 20 = W. Chr. 359 (127 CE), line 31; P. Hamb. I 65 = SB XVIII 13995 (140/141 CE), lines 7–8; P. Strasb. IV 218 (150 CE), lines 2–4; P. Strasb. VI 568 (c. 138–161 CE), line 9.
- 241 BGU I 234 (142 CE; Karanis), lines 6–7; SB I 4414 (143 CE; Karanis), line 9; P. Aberd. 57 (II cen. CE; Soknopaiou Nesos), lines 11–12.
- 242 P. Tebt. II 376 = W. Chr. 350 (162 CE), lines 14–15.
- 243 Rostovtzeff (1910: 159–66); Rowlandson (1996: 80–1).
- 244 Hagedorn (1986).
- 245 Rowlandson (1996: 82; 2006: 187–93).
- 246 P. Flor. I 20 = W. Chr. 359 (127 CE; Theadelphia) and P. Iand. III 27 (101/102 CE; Euhemeria?) with Hagedorn (1986: 99 n. 10) and Kruse (2002: 600–1), *contra* Wilcken (1920: 296); cf. Jördens (2009: 464–8).
- 247 Rowlandson (2006).
- 248 P. Oxy. VI 899 = W. Chr. 361 (200 CE; Oxyrhynchus); Jördens (2009: 464–5).
- 249 Rowlandson (2006).
- 250 P. Lond. III 604 A (47 CE; Krokodilopolis, Panopolite?).
- 251 Tacoma (2006: 107–11).
- 252 Hayami and Kikuchi (1982); Park (1992); Platteau (1996); Nugent and Sanchez (1998); Hesseling (1998).

²⁵³ Bowman (1985: 148–9); Rowlandson (1996: 68–9).

²⁵⁴ Bagnall (1985: 296–9).

Part III Fiscal and administrative reform

Chapter 5 Land taxation and investment

Introduction

Fiscal institutions bear considerable weight in the argument advanced in this book. The conclusions drawn from the previous chapters raise a new question: if private land rights were already so extensive in the Nile Valley during the Ptolemaic period, then what caused the agrarian economy to change under Roman rule? Public archives for the registration of property emerged already in the Ptolemaic period, so Roman reforms in this area were not as revolutionary as is generally assumed. Where significant changes have gone unrecognized is in the fiscal domain. In addition to property rights, taxation played a central role in shaping the incentives for economic activity. In this chapter, the relationship between land taxation and agricultural investment is under investigation, while in the next chapter the arguments are extended to the issue of state and temple redistribution. The two are closely intertwined.

Reforms in the early Roman period concerning how private land was taxed acted as a powerful stimulus for the accumulation of land and investment in its productivity. In contrast to law and land tenure, taxation has received little attention in the scholarship on Greco-Roman Egypt, especially the Ptolemaic period. Its neglect leaves a crucial empirical and explanatory gap in our understanding of the transition from Ptolemaic to Roman rule.¹ As far as land taxes go, the prevailing consensus holds that there were no substantial changes from the Ptolemaic to the Roman period.² Where there were changes in terminology, these have been seen as a reflection of the privatization of land under Roman rule.³ By contrast, there are virtually no studies that examine how taxes shaped the economic incentives that impinged on productivity or how they

distorted the distribution of wealth under different fiscal regimes.

The rates and mechanisms of taxation constitute an institutional framework that gives rise to qualitatively different economic systems. The Ptolemaic state had a redistributive royal and temple economy that captured the agricultural surplus and used it to maintain the military and bureaucracy along with palace and priestly elites. This is not to deny the importance of markets: leaving aside Alexandria's significance as a commercial harbor, Ptolemaic legal institutions, as the previous chapter pointed out, did much to facilitate transactions in the countryside. The distinction being drawn here is with the economy of Roman Egypt. Land and labor markets obtained a whole new significance, which is evident in the growth of private estates and tenancy. Urban industries probably expanded as well. Property ownership and production for the market became the basis of elite wealth, rather than royal or temple privileges. One could even argue that the transition was from a redistributive to a market economy, as long as one remembers that it represents only a *relative* shift along that continuum.

The differences between Ptolemaic and Roman Egypt illustrate that the economy is not an independent sphere of human activity but one embedded within an institutional landscape that is shaped by social and political relations. The heavy Ptolemaic harvest taxes created a redistributive economy by capturing the surplus of primary producers, above all to finance the king's expenditure, but also for privileged groups to siphon away revenue or to enjoy exemptions that shifted the fiscal burden back onto the producers. The low fixed taxes charged on private land in the Roman period provided incentives for agricultural investment and new opportunities for social and political advancement among landowners. They contributed to the expansion of private estates and to what has been termed "economic rationalism" or profit-oriented estate management.⁴ To the extent that this represents a change from the way Ptolemaic landholders managed their estates,

the institutional structure furnishes a more plausible and empirically tractable explanation than some kind of cultural or psychological transformation.

The profit-oriented management and irrigation improvement of Roman estate owners was no more rational than the risk aversion and low investment of Egyptian peasants and smallholders in the Ptolemaic period. Scholars sometimes idealize the world of the peasant as one where rational self-interest was subordinate to communal values and social solidarity. Yet even the latter could be used as a strategy to minimize risk or to win over others for personal gain.⁵ The fiscal regime and the relative insecurity of property rights, rather than economic primitivism, were probably the main factors that discouraged investment in land in the Ptolemaic period. During that period the main fiscal distinction was between the high variable rates levied on regular landholders – whether or not they had legally alienable property rights – and the special rates demanded from privileged members of the army or administration and from some temple estates. Many peasants may have actually preferred annual negotiations with village elders about land rights and annual surveys to determine tax liability and thus have felt threatened by legal privatization and an inflexible fiscal regime.

The turning point came in early Roman Egypt, sometime during the Julio-Claudian period, when the traditional harvest taxes were abolished for private landowners and the low fixed rates that formerly applied only to some privileged groups were widely extended. These low fixed taxes created conditions favorable for the emergence of a provincial landowning elite and for landowners' political and economic dominance in the countryside. As landowners became responsible for local governance through the introduction of the liturgical system described in the next chapter, they themselves were in a position to enforce property rights and collect taxes as rotating magistrates. Unlike Ptolemaic officials, such metropolitan officials thus had incentives that were aligned with those of private landowners against traditional peasant communities under state or temple

supervision.

The social and economic corollaries of these two very different fiscal regimes were the dominance of royal and priestly elites over primary producers and the protection of low-risk farming strategies with little agricultural investment under the Ptolemaic harvest tax regime and, conversely, the success of private landowners under the Roman fixed-tax regime. A range of evidence discussed below seems consistent with the hypothesis that the change in fiscal regime led to increasing agricultural investment and productivity. The chapter concludes with a comparison of the analogous fiscal institutions in pre-industrial Europe and Japan. They illustrate the correlation between fixed taxes and agricultural investment or alternatively between variable harvest taxes and less productive peasant systems.

Harvest taxes in ptolemaic egypt

The lack of any comprehensive study of Ptolemaic taxation is a major obstacle to making any generalizations about continuity and change vis-à-vis the Roman period. For the present purpose, it has been necessary to concentrate on what seemed to be the most important taxes for meeting the state's demands and for shaping the incentives that influence the performance of the agrarian economy. In Ptolemaic Egypt, that means above all the variable harvest tax levied on all grain-producing land subject to regular royal taxation. There were some similarities between this harvest tax and the proportional tax on vineyards and orchards.⁶ After briefly describing the latter, this section delves deeply into the nature of the variable harvest tax. The subsequent section turns to the fixed taxes and additional regulations on grain-producing temple and cleruchic land in Ptolemaic Egypt. To make the case for a relatively uniform harvest tax regime in Ptolemaic Egypt, it is necessary to consider terminology, methods of collection, and rates of taxation in both the Fayyum and the Nile Valley, the two regions for which there is sufficient evidence.

With respect to vineyards and orchards, the case for a somewhat uniformly imposed Ptolemaic taxation system is least controversial. In a royal decree of 263 BCE, Ptolemy II ordered all landholders, including cleruchs and gift-estate holders, to pay this so-called “portion” (*apomoira*) tax, typically at the rate of $\frac{1}{6}$ of the harvest, to finance the new cult of the queen Arsinoe II. The royal scribe of each nome was ordered to collect data both on the size of all vineyards and orchards and also on their anticipated yields (*genemata*), with temple land being registered separately.⁷ The text implies that before that time owners of vineyards and orchards had traditionally paid some share of their harvest to Egyptian temples directly. The new regulations may represent an intrusion into the temples’ administration, one that necessitated extensive land surveying to determine the ownership and productivity of the land, but did not necessarily lead to a reduction in the temples’ revenue.⁸ Royal revenue from the proportional tax probably came primarily from its extension to non-temple land, while the temples continued to receive the proceeds from their estates, albeit indirectly through the royal administration.⁹

Thus the formation of the Ptolemaic state entailed an administrative expansion and heavy fiscal demands on vineyard and orchard harvests throughout Egypt. According to Ptolemy II’s reforms, only artificially irrigated vineyards in the Thebaid and cleruchic plots whose recipients were on active duty were entitled to a reduced $\frac{1}{10}$ rate on vineyards. Orchards, on the other hand, were taxed uniformly at the rate of $\frac{1}{6}$ of the harvest. The tax on orchards was paid exclusively in money according to an annual valuation (*ex syntimeseôs*) of the harvest, while the wine harvest was paid in kind until the beginning of the second century BCE, when cash payments to the royal bank usually, but not always, appear in place of payments in kind.¹⁰

In addition to the proportional tax (*apomoira*), owners of vineyards and orchards had to pay an apparently fixed tax that was assessed by area and thus called the “aroura tax” (*eparourion*) or alternatively “money rents” (*argyrikoî*

phoroi).¹¹ These two terms for the tax were clearly equivalent because, according to receipts, the proportional tax was paid together with one or the other, but never with both.¹² There is only one receipt containing both the amount paid and the area of the land, which gives the rate per *aroura* as 380 drachmas for the *artaba* tax in 207 or 190 BCE, but it is unknown whether this was a vineyard, an orchard, or both.¹³ At that time 380 drachmas was worth about 2.4 *artabas* of wheat. The ratio between the *aroura* tax and the proportional tax is better known, typically ranging between 1:3 and 1:5, presumably depending on the quality of the harvest.¹⁴ If one assumes that the *aroura* tax remained at a fixed standard rate during the Ptolemaic period, the owners of vineyards and orchards may have paid in total the monetary equivalent of roughly 7–12 *artabas* of wheat per *aroura*.¹⁵ This estimate need only be of the right order of magnitude to enable one to draw interesting conclusions. It is about double the burden on grain-producing land in Ptolemaic Egypt and more than triple the rate on vineyards and orchards in the Roman period.¹⁶

To understand Ptolemaic land taxation, whether it be of vineyards and orchards or of regular arable land, it is necessary to qualify the distinction between rents and taxes. The term rent (*phoros* or *ekphorion*) was frequently used to denote payments to the king from holders of royal land or private land subject to royal taxation. *Phoros* most often refers to payments in cash and *ekphorion* to those in kind, but the terms were also interchangeable. In a recent article, Maresch reaffirms the traditional claim that use of the term “rent” implies that private land was held on terms of hereditary leasehold. He goes further than others in denying private ownership even of vineyards and orchards wherever rents (*phoroi*) are mentioned. By contrast, he argues, the term “*aroura* tax” (*eparourion*) was applied in the case of private property.¹⁷

The preference for the term *eparourion* in the south starting in the second century BCE corresponds, in Maresch's view, to a gradual privatization of land in Ptolemaic Upper Egypt coinciding with the appearance of Greek land sales there.¹⁸

Yet this omits the Demotic evidence for land sales in the third century BCE. Moreover, some vineyards and orchards that were liable to money rents (*argyrikoi phoroi*) in Middle Egypt were explicitly described as land that had been purchased (*eonemenê*) from the state, not leased.¹⁹ The *eparourion* was fiscally identical to the *phoros* and, despite its relative frequency in the south, was interchangeable. Notwithstanding full legal rights to sell the land – and not merely to cede it, as one would a leasehold – Maresch insists that use of the term “rent” (*phoros*) is sufficient to prove that there was no private ownership.²⁰

This is another variation of the thesis that private grain-producing land was held on hereditary lease because it paid “rent” (*ekphorion*) to the king.²¹ *Phoros* and *ekphorion* were indeed the most common words in Greek for rents paid by tenants to their landlords, but the semantic range was hardly limited to this legal context.²² The Persian empire and Hellenistic rulers collected *phoros*, “tribute” or “tax” (not rent), from their fiscal domains and, within these, they seem even to have distinguished between royal estates in the strict sense, where the king was the legal owner, and other tribute-bearing land.²³ Even the fifth-century Athenian empire collected *phoros* from its subjects without any connotation of ownership. In a work on economics attributed to Aristotle but probably written by one of his students at the beginning of the Hellenistic period, the author refers to *ekphorion*, often translated as “harvest tax,” as the name for the principal source of state revenue.²⁴ Rather than being rent in the legal sense, *ekphorion* was a general tax on agricultural production.

Just as in the case of vineyards and orchards, the Ptolemies had a uniform policy for taxing arable land, which may be termed a harvest-tax regime. To demonstrate this claim, however, requires sifting through the confusing terminology. Based on the material available in 1899, Wilcken doubted whether Ps.-Aristotle's term *ekphorion* was ever used for Ptolemaic land taxes.²⁵ The publication of the first volume of the Tebtunis papyri in 1901 and other Fayyum texts proved that the grain that cultivators of royal

land owed to the state was called *ekphorion*. This evidence seemed consistent with Rostovtzeff's influential view of Ptolemaic royal ownership. The insecure tenure rights of royal cultivators in the Fayyum were regarded as paradigmatic of the organization of the Egyptian agrarian economy. While he recognized the more individualized land rights in the Nile Valley, he interpreted them as a form of hereditary lease, at least in his early work.²⁶ Thus the alleged absence of private arable land provides the explanation for why the king's subjects paid rent rather than taxes.

Based on the tax receipts from Upper Egypt, Wilcken suggested that the general term for Ptolemaic taxes on land was *epigraphê*, which means an impost or tax "assigned to" someone. These receipts show that cultivators in Upper Egypt made frequent payments to the royal granaries for such a tax.²⁷ Based on the much fuller material from their excavations in the Fayyum, however, Grenfell and Hunt argued that the *epigraphê* was not the regular land tax, but rather an extraordinary tax in kind levied occasionally for unknown reasons. Their view has prevailed until recently despite the large number of Upper Egyptian receipts for payments of this tax.²⁸ The studies mentioned so far were based exclusively on Greek texts. By comparing the Demotic evidence from Upper Egypt, Vandorpe was able to identify the *epigraphê* with the Egyptian harvest tax (*šmw*) on royal and temple land, which is attested since at least the New Kingdom.²⁹ Her work has created an opportunity to analyze a rich new body of data in both Greek and Egyptian for taxation methods and rates in Upper Egypt.

Only by comparing the Upper Egyptian and the Fayyum evidence can one begin to understand the Ptolemaic fiscal regime as a whole. Vandorpe strongly differentiates the harvest tax (*epigraphê*) in Upper Egypt from the rent (*ekphorion*) charged on royal land in the Fayyum. Her distinction between tax and rent was based on the observation that taxpayers in Upper Egypt bought, sold, and inherited the land, while cultivators of royal land in the

Fayyum did not. In her study of the harvest tax, she takes for granted that rent and tax are two completely different categories: “since this article deals with taxes, the category of royal land leased to royal cultivators is not relevant here.”³⁰ Not surprisingly then, one of Vandorpe's main conclusions is that there were regional differences in Ptolemaic land taxation; a fixed land tax prevailed in the Fayyum and Middle Egypt, while a harvest tax was levied on temple and private land subject to royal taxation in the Thebaid.³¹ However, by excluding royal land in the Fayyum and Middle Egypt (because it was supposedly a rent and not a tax), she is comparing only cleruchic and temple land in the Fayyum with all land in Upper Egypt.

Upon further analysis, the *epigraphê* and *ekphorion* in Ptolemaic Egypt seem virtually identical and were not consistently distinguished in the ancient sources. The recently discovered Greek land survey from the Apollonopolite nome dating to the late second century BCE provides clear confirmation that *epigraphê* referred to the regular tax on private land, but it also demonstrates the equivalence of this term with *ekphorion*. The heading for the calculation of tax revenue from private land (*idioktetos gê*) reads: “the harvest tax (*ekphorion*) from the assessment (*epigraphê*) established up to year 16.”³² The nuanced distinction implied here seems to be that the former refers to the revenue generally, while the latter specifies its assignment to the cultivators during the sowing season. One land register from the Herakleopolite nome in Middle Egypt even seems to convert “grain rent” (*sitikê misthosis*) into an *epigraphê*.³³ Furthermore, the Demotic term (*šmw*), which appears interchangeably with *epigraphê* in tax receipts, means “rent” and appears frequently in lease contracts, making it analogous to *ekphorion* in Greek land leases.³⁴ The terminology therefore suggests that the so-called “rent” paid by cultivators of royal land was equivalent to the “harvest tax” paid by landholders subject to royal or temple fiscal domains in Upper Egypt. From the state's point of view, just as Ps.-Aristotle's *Economics* suggests, *ekphorion* was the principal source of state revenue and was assessed on land regardless of the cultivators' tenure rights.

Apart from the fact that the terms are equivalent in official documents, the methods of estimating and collecting the *epigraphê* on private land in Upper Egypt and the *ekphorion* on royal land in the Fayyum support the conclusion that they represent one common fiscal regime. The assessment of taxes in kind for grain-producing land is closely linked to the annual land survey. Each autumn during the sowing season shortly after the flood receded, the scribe of every village conducted a survey of the land. It kept track of the size of the cultivators' plots, what was planted, and how much revenue they would provide the royal administration. The village scribe reported to the royal scribe with responsibility over the entire nome, assisted by district scribes with oversight of several villages. Local reports were aggregated at the nome-level by the royal scribe and also forwarded to Alexandria for further inspection, giving the highest officials and the king vast amounts of information about the entire kingdom. The amount of bureaucracy that this system implies is staggering, especially in view of the documentation that the small Fayyum village of Kerkeosiris generated in just a few years.³⁵ Comparable archives are unfortunately not well preserved and most land survey texts derive from the Fayyum. However, the procedures in Alexandria imply a certain degree of standardization in the assessment of royal revenue in Egypt.

In Kerkeosiris and other Fayyum villages the main revenue was the *ekphorion* due to the state from the cultivators of royal land. As part of the survey of fields, the village scribe or some supporting officials measured the fields that were being sown and determined at what rate they would be charged. The informal cession of land within the community in response to flood conditions necessitated adjustments to the area for which each cultivator was liable. Keenan and Shelton also note: "Unless special arrangements to the contrary had been made, the rental class to which a given lot was assigned might change from year to year, most probably in accordance with the value of the land under changing flood conditions."³⁶ This explanation for annual adjustments in the rental class for cultivators of the same land is convincing and resembles the procedure of annual

survey and rate adjustment for assessing the harvest tax in the Thebaid.³⁷

The valuation of land for taxation seems to be expressed explicitly in the documents from Kerkeosiris and elsewhere when officials demand that the land be assessed “according to its worth” (*ek tês axias*).³⁸ Decrees from the Roman period, discussed below, confirm this interpretation, as the prefect Ti. Julius Alexander and the emperor Hadrian reprimanded local officials for making the high rates of taxation on public land inflexible by not making an annual survey and taxing the land according to its worth.³⁹ Hence the rate at which royal land would be charged in the Ptolemaic period varied depending on annual fluctuations of the Nile and presumably changes in topography or soil conditions such as the salinity problems stemming from insufficient drainage in the Fayyum.⁴⁰

Shelton's work on the Kerkeosiris land surveys effectively demolished the older, more sinister view of Ptolemaic taxation advocated by Rostovtzeff. According to the latter, royal farmers were locked into an inflexible lease contract with a fixed rate of rent that lasted until the state called for a new “leasing out” (*diamisthosis*) of the village lands, in which case current tenants were evicted in favor of higher bidders. Those farmers who were “without contract” (*aneu synallaxeôs*) were supposedly subject to even worse and more arbitrary treatment.⁴¹ However, Shelton suggests that written contracts for royal land with specific arrangements were the exception, used, for example, when growing special crops or when a special low rent was offered as an incentive to cultivate marginal land, while being “without contract” was the typical status of royal farmers. Moreover, the annual variability of the rents as well as the communal land rights of royal farmers described in the previous chapter undermine Rostovtzeff's theory of periodic leasing out, which has little textual support.⁴² Hence the *ekphorion* was the variable harvest tax that the royal administration demanded from each cultivator and determined annually on the basis of the land's quality and conditions of the flood.

In the Thebaid, land-measurement ostraka reveal a method

of assessing the *epigraphê* that is analogous to the assessment of the *ekphorion* in the Fayyum. The only difference is the nature of the evidence. We do not know how royal farmers in the Fayyum learned the results of the assessment, including the measurement of their fields and the appropriate rent category, which would determine how much they owed from the spring harvest. It may have been communicated to them orally and recorded only in the village scribe's land-survey archive. In the Thebaid, by contrast, there are copious receipts written on ostraka that would have provided such information to the cultivators and protected them from manipulation by officials at the time when payments were due.⁴³ Many of the receipts with the measurements of the fields record the area but not the rate of taxation explicitly. It is likely that there was often no appreciable difference in the quality of the land, so the rate would have been implicit. What is clear is that there was no fixed rate, and there are enough examples to show variations in the *epigraphê* in the Thebaid similar to those for the *ekphorion* in the Fayyum. That the flood conditions and the quality of the land were responsible for these variations is suggested by the Apollonopolite land survey, in which the average rates differ across the four geographical divisions within the nome.⁴⁴

Traditionally, temples assessed and collected harvest taxes from their domains, but starting around 223 BCE the royal administration began to receive the harvest taxes directly from cultivators of temple land in some parts of the Thebaid.⁴⁵ In a second-century-BCE legal dispute between the priests of Pathyris and Hermonthis over temple land, the preliminary ruling was to allow the Hermonthite priests' cultivators to work the land and pay the "rents" (*ekphoria*) to the state. Meanwhile, however, the cultivators' surplus would be held in escrow by the state until the royal court in Alexandria decided which temple had rightful ownership (*kyrieia*).⁴⁶ The text provides further evidence that the *ekphoria* collected by the Ptolemaic state was a harvest tax synonymous with the *epigraphê* and did not imply that the cultivators were royal tenants.⁴⁷

The manner in which this state grain revenue was collected illustrates additional similarities between the Thebaid and the Fayyum that suggest a uniform fiscal regime. Although it used to be believed that royal officials sequestered the entire harvest of royal farmers until they seized the king's share and released the farmers' portion, this view is no longer tenable.⁴⁸ Payments in kind at Kerkeosiris were brought to officials at the granary in several installments between late April and August. As Keenan and Shelton point out, "in this respect Kerkeosiran practice differs in no way from that found in Upper Egypt."⁴⁹ In the Thebaid, the harvest tax was likewise paid in multiple installments to royal granaries during this same period.⁵⁰ Once again the difference between the Thebaid and the Fayyum is in terms of the documentation rather than in the methods of assessment and collection. Whereas individual receipts on ostraka for paying harvest taxes in the Thebaid are abundant, the evidence from the Fayyum comes from state documents such as land surveys and granary accounts. Even if this represents a difference in scribal practice, it cannot necessarily be taken as evidence for a different taxation policy.

A comparison between the rates of the *epigraphê* and *ekphorion* furnishes the most compelling evidence for the fact that both refer to the same fiscal regime. Most cultivators of royal land in the Fayyum paid around 4 to 6 artabas of wheat per aroua. A land survey from Tanis in the eastern Fayyum in the mid-third century BCE gives four fiscal categories for non-pasture land, $6\frac{3}{4}$, $5\frac{3}{4}$, $4\frac{3}{4}$, and $2\frac{1}{2}$ artabas per aroua, and five categories for pasture land (ranging from 2 to $4\frac{3}{4}$ artabas per aroua).⁵¹ By far the greatest percentage of the land (68%) was in the highest category, $6\frac{3}{4}$ per aroua. This part of the survey seems to deal entirely with royal land, where cultivators had customary tenure rights. The total revenue expected from royal land in this particular year implies an average rate of 5.9 artabas of wheat per aroua. The royal cultivators in Kerkeosiris paid a slightly lower but comparable rent (*ekphorion*) at the rates $4\frac{11}{12}$, $4\frac{1}{2}$, 4, $3\frac{1}{2}$, $3\frac{1}{4}$, 3, $2\frac{1}{2}$, 2, and 1. Based on total revenue on royal land for the years 124–

110 BCE, the average rate was about 4 artabas per aroura, so again most land was in the highest categories.⁵²

The rates of the harvest tax on private land in Upper Egypt were similar to the rates in the Fayyum. The royal revenue expected from the total area of private land in the Apollonopolite nome in Upper Egypt implies an average of 5.3 artabas of wheat per aroura, according to the land survey of 119/118 BCE. The so-called island land generated more revenue than highland.⁵³ Individual receipts from the Pathyrite nome and from the Theban area provide evidence for comparable rates for land subject to the harvest-tax regime, including some temple land, during the second and first centuries BCE. They typically fall between three and eight artabas of wheat per aroura.⁵⁴ That some are higher than the Fayyum may reflect higher yields in Upper Egypt or variation in the state's fiscal demands from one period (or place) to another, though discrepancies in the artaba-measure cannot be excluded.⁵⁵ In the Herakleopolite nome, private land, temple land, and cleruchic land, according to one register, were taxed at rates ranging from two to four artabas per aroura plus an additional 150 drachmas per aroura in money. As the editor notes, the graduated scale of these taxes in kind resembles the payments of peasants on royal land in the Fayyum and thus, one may add, the payments of private landowners in Upper Egypt as well.⁵⁶

Unlike the Ptolemaic proportional tax (*apomoira*) on vineyards and orchards, the harvest tax on grain-producing land was not necessarily a percentage of the harvest. The assessment was made during the sowing season on the basis of the land's condition at that time. Land was simply placed into a general rate-category that in most cases probably did not need to be changed from one year to the next. Nevertheless, insofar as these fiscal categories corresponded to anticipated productivity, the actual percentage of the harvest varied less than the nominal rates per aroura indicate. It is impossible to determine with any confidence the typical harvest of grain-producing land. Historians conventionally assume that it could yield about ten to twelve artabas per aroura in Egypt, which represents a ten-

to twelve-fold yield on seed since one artaba was planted per aroura.⁵⁷ If so, then the royal and temple economy may have claimed something like 40% to 60% of the cultivators' harvest. The yields may be underestimated and hence the burden of taxation exaggerated.⁵⁸ One third-century BCE text suggests that the Horus temple in the Apollonopolite nome collected 25% of the wheat harvest from cultivators on its estate, but it is unclear whether this was the same as the harvest tax.⁵⁹ Even this would be a high rate compared to what private landowners in the Roman period paid. The relationship between the harvest-tax regime and the privileged tax rates that often appear in association with temple and cleruchic land requires further investigation.

Ptolemaic land taxes

Like the "aroura tax" (*eparourion*) on vineyards and orchards, there was a fixed tax in Ptolemaic Egypt on regular arable land belonging to temples and cleruchs. If there was a single generic term for it, this was probably the "artaba tax" (*artabieia*).⁶⁰ As the name implies, the rate was typically one artaba per aroura. However, several variations are attested, each with its own designation, including the "half-artaba tax" (*hemiartabieia*) and "two-artaba tax" (*diartabieia*). What they have in common is that they were assessed at a fixed rate per aroura of land, rather than being based on productivity, and that the rates themselves were low relative to the variable harvest taxes discussed in the previous section. Their association with temple and cleruchic land reflects the privileged status of these land-categories in Ptolemaic Egypt. Yet even temple and cleruchic land seem to not have been entirely exempt from harvest taxes. As has already been seen, the latter are also attested on temple land, especially in Upper Egypt. Occasionally fiscal demands even drove the Ptolemies to introduce extraordinary levies on the agricultural surplus of cleruchic land.

Scholars sometimes assert that an artaba tax (*artabieia*) was applied not only to cleruchic and temple land but also

to royal land in addition to its rents.⁶¹ There is, however, nothing to support the claim that royal farmers were ever assessed such fixed rates, not even in Kerkeosiris, where the lack of evidence cannot be due to insufficient data. The only evidence cited for this claim is the royal amnesty of 118 BCE, where the remission of fixed taxes follows immediately the clause about remission of “grain rent” (*sitikê misthosis*), but the two points are clearly separated in the text and could hardly refer to the same cultivators; more probably the first clause is about remission under the harvest-tax regime and the second about remissions for cleruchs.⁶² There were sometimes special short-term lease arrangements for royal cultivators who attempted to bring unproductive royal land under cultivation in exchange for a temporary low fixed rate, but it applied only for the duration of the lease and was still regarded as rent (*ekphorion*).⁶³

Vandorpe claims that temples and cleruchs paid the artaba tax (*artabieia*) in the Fayyum but that land in the Thebaid was generally assessed a harvest tax (*epigraphê*).⁶⁴ All temple land in Kerkeosiris was charged $\frac{1}{2}$ artaba per aroura. Supposedly only sown land was assessed, but there are instances of payments even when the land was reportedly uncultivated.⁶⁵ As already mentioned, temple officials in Egypt traditionally collected the harvest tax (Demotic *šmw*) for temple land while royal officials collected it for royal land.⁶⁶ However, Vandorpe argues that at the end of the reign of Ptolemy III, around 223 BCE, the state began to receive harvest taxes in the Thebaid directly, while compensating the temples with a subvention payment (*syntaxis*) in cash or in kind.⁶⁷ It could even conceivably provide an explanation for the subsequent Great Theban Revolt (207–186 BCE).⁶⁸ What clashes with Vandorpe's regional dichotomy, however, is that there are a number of tax receipts from Upper Egypt that record payments of the artaba tax (*artabieia*) together with the harvest tax (*epigraphê*) on temple land. The most plausible explanation for these receipts is that they refer to temple land that was charged *both* of these taxes.⁶⁹ The rate of the artaba tax (*artabieia*) was sometimes less than one artaba, but its imposition suggests that the state had introduced a direct tax

on temple land in addition to the traditional harvest taxes.⁷⁰

The Memphis decree of 196 BCE, also known as the Rosetta stone, and the amnesty decree of 118 BCE both indicate that the temples were granted relief from the artaba tax (*artabieia*). It must then have been introduced sometime before 196 BCE, and its abolition suggests that it had been an unpopular imposition on the temples. Nevertheless, either it was reintroduced during the subsequent period of instability, or else local officials ignored the order and continued to collect the tax.⁷¹ The decrees seem consistent with a pattern of increasing burdens during periods of intense civil and dynastic conflict and remission during periods of consolidation.

According to the Memphis decree of 196 BCE, the king confirmed the temples' rights to their temple revenues as well as the annual subvention payment (*syntaxis*).⁷² This does not imply that the subvention was meant to replace traditional revenues, but is also not specific enough to support the conclusion that all temples received both. The later royal amnesty of 118 BCE likewise guaranteed temples' rights to their land and autonomous administration of their revenues.⁷³ While this vaguely implies general applicability to the temples, another phrase in that text might suggest that not all temples received the subvention payment (*syntaxis*) from the state.⁷⁴ It remains obscure why some cultivators of temple land in the Thebaid paid both the harvest tax and the fixed artaba tax, while in the Fayyum they seem to have paid only the latter.⁷⁵

The following hypothesis could explain these differences as well as other peculiarities of temple finance in the Ptolemaic period. While Ptolemaic taxation became more intrusive in the Thebaid, temples in other areas presumably continued to administer their estates independently and to collect their own harvest taxes or rents (*ekphoria*). A papyrus from the Fayyum contains a royal decree on temple revenue ordering officials to desist from diverting the rents from temple land and other traditional sources of wealth that rightly belong to them.⁷⁶ In the Thebaid, the royal administration appears to have been more determined to subordinate some temples to

the state by replacing their internal revenue with a subvention payment.⁷⁷ Other temples, including those in the Fayyum, whose landholders paid only the fixed land tax, were not entitled to receive the subvention. If this hypothesis is correct, it sheds some light on the prefect Petronius' attempt at the beginning of the Roman period to complete this process by inducing all temples to turn over the collection of rents from temple land to the state in exchange for an annual subvention payment (*syntaxis*).⁷⁸

In some cases, the payment of the artaba tax by cultivators paid to the state may conceal the fiscal regime internal to the temple estate. In Kerkeosiris, for example, one sees only that temple land was registered to unnamed priests and was charged a fixed rate of one-half artaba per aroura. Even Demotic lease contracts of temple land from Tebtunis mention only the rent paid by the tenant to the landholder and a two-artaba tax paid to the state. It is interchangeably termed the “royal harvest tax” (*šmw pr-c³*) and the “royal tax” (*md.t pr-c³*), but Wegner has shown that the rate remained two and a half artabas per aroura even after the rent doubled because the landholder built a dike to improve irrigation.⁷⁹ It is probably significant that the landholder in question was a priest of Soknebtunis. Temples that were able to collect their own harvest taxes or rents (*ekphoria*) may have preferred to allocate some land to priests and to pass on to them the fiscal privilege of paying only the low fixed tax to the state.

Even if it did puncture the fiscal autonomy of temple domains, the fixed land tax underscores the privileged role of temples in the Ptolemaic period. The alleged abolition of the artaba tax (*artabieia*) in the decrees of 196 and 118 BCE perhaps even made some temple land exempt from royal taxation altogether, at least temporarily. Larger temples were traditionally independent, almost state-like organizations that collected their own harvest taxes or rents from landholders on the god's estate just as the king did from landholders within his domain. The apparent regional differences between the Fayyum and the Thebaid are probably the result of the Ptolemies' attempt to exert more

direct control over the south, where temples' political and economic power made them potential rivals. Even these temples were entitled to a subvention payment (*syntaxis*) from the royal revenue received from temple land. Other temples could exploit the agricultural surplus directly and give their priests access to fiscally privileged land. By contrast, landowners and leaseholders within the royal and temple domains, whose office or social status did not entitle them to such benefits, were subjected to the pervasive harvest-tax regime.

The rest of this section examines cleruchic land, where privileged cleruchs likewise paid an artaba tax (*artabieia*) and were normally exempt from variable harvest taxes or rents charged on other land.⁸⁰ Yet even here the Ptolemies may have introduced a kind of harvest tax during times of fiscal trouble. Third century BCE cleruchs (*klerouchoi*) received (as their title implies) an allotment of land (*kleros*) of a size proportional to their rank and status. While the allotments were compensation tied to military service, it seems that they were concentrated strategically in land reclamation areas of the Fayyum and Middle Egypt. During the second century BCE, the term “settlers” (*katoikoi*) began to be employed to distinguish an exclusive subset of the cleruchs. The change may be related to the extension of cleruchic land grants to lower-status Egyptian cavalry and infantry (*machimoi*) as well as local police and guards.⁸¹ The fact that nearly all settlers were cavalrymen and that the term repeatedly appears in connection with the cavalry suggests that it may have been restricted to cavalry.⁸² It is unlikely that membership in the class of military settlers (*katoikia*) was based on ethnicity, which was often ambiguous by the second century BCE, since some Egyptian elites obtained the status.⁸³

In the late second century BCE, there is evidence that a number of new cleruchs entered the class of military settlers (*katoikia*), which may imply promotion to cavalry units.⁸⁴ One of the principal testimonies is a royal decree of 118 BCE at the conclusion of the recent civil war and revolts:

Since some [cleruchs], who have been weakened...who suffer hardships, have surrendered their allotments, others have exchanged them, some have transferred them to fellow soldiers, and different people have been registered into the *katoikia* from private landowners (*idioktemones*) and from other classes (of cleruchs) according to the decrees, [it is decreed that] they and their heirs shall remain in secure possession of the allotments for all time, that those who manage the allotments shall not be registered among the cleruchs by rank (*kat' axioma*) and that, according to the previously decreed benefactions, the occasional (*kata kairon*) harvest taxes (*epigraphai*) and contributions (*eisphorai*) shall not be exacted.⁸⁵

The text suggests that in the years prior to 118 BCE there had been confusion about landholdings owing to disturbances and transfers, allowing new people to come into the possession of cleruchic allotments. These new occupants of cleruchic land were in some cases private landowners (*idioktemones*) and in other cases cleruchs who did not belong to the class of cavalry settlers. Both recently obtained the status, but it is not clear whether it was as a consequence or precondition of receiving such land. Contemporary texts from Kerkeosiris refer to lower-status cleruchs, for example policemen and desert guards, who had recently been registered into the settler group (*katoikia*). It may also be relevant that private landowners with no military or police titles appear in the registers of cleruchic landholders in the Herakleopolite nome.⁸⁶ The phrase “the *kat' axioma* cleruchs” is an obscure status designation that has been translated as “in the rank of cleruchs.” It presumably means regular cleruchs in opposition to the more privileged status of the settler group.⁸⁷ The latter's exemption from harvest taxes (*epigraphai*) and contributions (*eisphorai*) is interesting in light of the evidence discussed below for members of this group paying harvest taxes as late as 137 BCE.

Of this settler group (*katoikia*) not much is known from the Thebaid, but the Apollonopolite land survey from the late

second century BCE suggests that regular cleruchs (*klerouchoi*) paid something akin to the harvest tax on private land at high variable rates.⁸⁸ Only 658 arouras, or 3% of the area surveyed, were classified as cleruchic land, but rather than being charged a fixed artaba tax, they were assessed according to the value of the land. The text does not provide rates for individual plots, only aggregate totals of land and revenue for cleruchic land in the four regions of the nome and a grand total for the entire nome. The corresponding rates of artabas per aroura are averages rather than fixed rates, which imply even greater variability at the local level than the already diverse regional rates of 4, 4.06, 4.13, 4.16, 4.44, 4.49, 4.54, 5.5, 5.58, and 5.61 artabas per aroura for cleruchic land.⁸⁹ Similar variable rates applied in this text to the so-called land “in release” (*aphesei gē*) registered to temples. No name is given for these assessments of taxes, but they appear to be the same as the tax on private land, which is called “the harvest tax (*ekphorion*) from the assessment (*epigraphē*) established up to year 16,” as noted above.⁹⁰ Likewise, in the Herakleopolite nome, one land register suggests that regular holders of cleruchic land were taxed at rates resembling the payments of peasants on royal land.⁹¹ The dating of the Herakleopolite land registers is unclear but an argument has been made in favor of a date in the mid-second century BCE.⁹²

In the Arsinoite village of Kerkeosiris during the late second century BCE cleruchs of all types, including those of lower status than members of the settler group, seem to have paid only low fixed taxes. In 118/117 BCE many paid the ½-artaba tax (*hemiarتابion*) but by 113/112 BCE it had been raised for some to one artaba (*artabieia*) and for others to ¾-artaba.⁹³ Such variations apply to cleruchs according to their status and are unlikely to have any correlation with differences in the level of the land's productivity in a manner analogous to harvest taxes. Only three cavalry settlers (*katoikoi hippeis*) appear in the tax lists, each paying the one artaba per aroura on their allotments. However, Keenan and Shelton caution that this is the only evidence for the artaba tax (*artabieia*) applied to this group in Kerkeosiris.⁹⁴ It is conceivable that they paid only this low fixed rate in late

second century BCE because of the “previously decreed benefactions” cited in the royal decree of 118 BCE, which exempted members of the settler group (*katoikia*) from paying harvest taxes (*epigraphai*). This still would not explain why other cleruchs in Kerkeosiris also paid only the low fixed taxes. Scholars tend to assume that the artaba tax (*artabieia*) was the regular tax for all cleruchic land, pointing to the fact that this was the typical rate on such land in the Roman period.⁹⁵

Despite their privileged status, other evidence suggests that the members of the settler group (*katoikia*) were not always exempt from harvest taxes (*epigraphai*), not even the settlers of the Arsinoite nome. The most important document, published only in the last decade, is a set of petitions addressed to the king.⁹⁶ The complaints are about unfair fiscal obligations to the so-called cavalry account (*hippikê prosodos*) being placed on the *katoikia*. The first petition of 149/148 BCE accuses local scribes of charging those who had entered into the *katoikia* with occasional (*kata kairon*) contributions and other taxes (*eisphorai kai t'alla*) contrary to previous decrees. These are likely to be the same special contributions (*kata kairon eisphorai*) cited in the decree of 118 BCE quoted above, which could imply that officials simply ignored the royal order.⁹⁷ The second petition on the papyrus is too damaged to disclose much about the complaints. The third one is the most interesting as well as the most complicated petition. It begins:

When we were paying the taxes (*kathekonta*) from the harvests according to the land survey, in year 24 [158/157 BCE] of your brother's reign, o great king, when Dioskourides was the finance minister (*dioiketês*), it was established that 243,577 artabas would be taken from us, excluding the Thebaid. For that sum, the finance minister's scribe received the annual dues from the confiscated allotments, which totaled 8,800 artabas until year 26 of your reign [145/144 BCE], o king. While the remaining 234,777 artabas have been paid

by us, we were extremely pressured in the payment of the 8,800 artabas, so we begged you in year 26, for the reasons mentioned, to give us relief and to add (to our group) those who have entered and those who will enter (the *katoikia*). Because it was decided to add for us at one third (?) the taxes of those who entered the *katoikia* after the establishment of the amount in year 24 by Dioskourides in those nomes in which the harvest tax (*epigraphê*) is paid, we extended you our greatest thanks.⁹⁸

The petition goes on to request protection from unscrupulous officials, who were still trying to extract the additional 8,800 artabas despite the previous decision. This disputed revenue was due from cleruchic land that had been confiscated by the state but was nevertheless being included in the total sum that had been levied, presumably annually, on the settlers. The settlers also wanted the taxes to be counted in the total sum that came from new settlers, who were enrolled after its establishment. The first sentence states that the taxes were assessed according to an annual land survey, which may imply that it was based on productivity, just like the harvest tax on royal and temple land, though this is not explicit in the text. Afterwards on the same papyrus there is a separate section with an account of tax arrears due to the cavalry account (*hippikê prosodos*), in which the two taxes mentioned are the two-artaba tax (*diartabia*) and the harvest tax (*epigraphê*).⁹⁹ Duttonhöfer argues that they were alternative taxes, so each landholder paid one or the other, unlike the fixed aroura tax (*eparourion*) on vineyards and orchards that was paid together with the proportional tax (*apomoira*), but the evidence for individuals' payments is slim.¹⁰⁰

A contemporary tax register from the Arsinoite nome potentially offers further insight.¹⁰¹ It reports that 64,792½ artabas, from a total of 461,545½ artabas of wheat that were due, had been paid up to the month of Mesore in year 32 of Ptolemy VIII Euergetes II (August 137 BCE).¹⁰² The remainder yet to be paid included about 30,250 artabas for the two-artaba tax (*diartabia*) and 25,590 artabas for the

harvest tax (*epigraphê*) of year 33 (137/136 BCE) as well as over 340,000 artabas for the arrears from year 32.¹⁰³ All of the sums are also converted into money equivalents. Another fragment of the papyrus lists several cavalry settlers (*katoikoi hippeis*), including a Macedonian and two citizens probably of Alexandria, who possess large estates of 320 to 500 arouras, along with small payments of taxes owed from various previous years.¹⁰⁴

Unfortunately, many aspects of this important text remain obscure. It is at least plausible that it describes Arsinoite nome's contribution from the two-artaba and harvest tax, perhaps 55,840 artabas (unless this is only a partial payment), towards the extraordinary annual levy of 243,577 artabas of wheat which the finance minister (*dioiketês*) Dioskourides imposed on the cavalry settlers collectively (except those in the Thebaid) in 158/157 BCE. If so, then the settlers of the Arsinoite nome were responsible for 23% of the collective burden.¹⁰⁵ One text does show that the holder of a cleruchic plot in the Arsinoite nome was required to pay a harvest tax (*epigraphê*) during this period between 158/157 and 137/136 BCE.¹⁰⁶ In any case, the tax register suggests that the settler group in this area had fallen far behind in its payments of these taxes.¹⁰⁷

One other crucial text bears directly on this problem but dates almost a century later, to 51/50 BCE. The finance minister (*dioiketês*) issued a command to the governor of the Herakleopolite nome, which the latter copied to a subordinate.¹⁰⁸ The beginning of the finance minister's letter is fragmentary, but he makes reference to the "collection of the harvests" (*synagogê tôn genematôn*), totaling 600,000 artabas of wheat, from the whole country and the payment of half, 300,000 artabas.¹⁰⁹ The minister urgently demands that the governor raise half, 35,680 artabas, of the total 71,360 artabas of wheat due from the settlers (*katoikoi*) from his nome as tribute (*phorologia*), threatening that he would be held responsible for every last artaba. Since it seems too small a sum for all of Egypt, most scholars have assumed that 600,000 artabas were the total yield or tax revenue only from the Herakleopolite nome.¹¹⁰ Yet the contrast made in

the text between “from the whole country” (*ek tês holês choras*) and “from the nome” (*ek tou nomou*) could not be any more explicit.

The settlers’ petition of 137 BCE, quoted above, suggests another possible solution. The finance minister in 51/50 BCE may have imposed another extraordinary tax levy, this time for 600,000 artabas, on the members of the settler group (*katoikia*). It may have proven unrealistic, just as the earlier one did, to judge by the arrears in the Arsinoite tax register, so that he had to halve the amount due or at least exact the payment in installments. This interpretation seems consistent with the fragmentary references to settlers (*katoikoi*) and perhaps even to arrears (*ophei[lemata]?*) in the opening lines of the finance minister’s letter.¹¹¹ Thus the Herakleopolite contribution would represent about 12% of the total burden placed on the *katoikia* in the mid-first century BCE.

In sum, the occasional (*kata kairon*) harvest taxes (*epigraphai*) and contributions (*eisphorai*) seem to represent sporadic intrusions of the Ptolemaic fiscal regime into the privileged realm of military settlers. It seems likely that the variable harvest taxes assessed on other types of land on the basis of its quality were extended to cleruchic land along with fixed land taxes. Even the latter may have only been introduced in the second century, since there is no evidence for an artaba tax in the third century BCE. The petition of 149/148 BCE implies that an earlier decree had abolished occasional (*kata kairon*) contributions and other taxes (*eisphora kai t’alla*) that were still being illicitly forced upon them.¹¹² The settlers’ dispute in 158–137 BCE about their harvest-tax liability strongly challenges the prevailing assumption that cavalry settlers paid only a fixed artaba tax. In this case the supposedly “occasional” levy apparently lasted more than two decades.¹¹³ The petition does state that the harvest tax was levied only in certain nomes. The Arsinoite nome appears to have been one of them.¹¹⁴ The royal decree of 118 BCE refers to “previously decreed benefactions” that exempted members of the *katoikia* from both the contributions (*eisphorai*) and the harvest taxes

(*epigraphai*) that were levied occasionally (*kata kairon*).¹¹⁵ This suggests that there may have been a separate decree between 137 and 118 BCE exempting them specifically from the harvest taxes. Around 51/50 BCE, however, there was evidently another extraordinary levy of this kind.

Alexandrian citizens who owned private estates are usually unmentioned in the documentary sources from the countryside. However, a royal decree of Cleopatra VII and Caesarion in 41 BCE highlights their fiscally privileged status.¹¹⁶ In response to a petition by Alexandrian landowners, the finance minister wrote to the local governors ordering his announcement to be posted in every nome in both Greek and Demotic. He claims that the official policy was that “no one is allowed to exact from these people [Alexandrian landowners] anything more than the duly established royal taxes.” However, the petitioners have complained that local officials in the nomes “manage to tax illegally, adding those people to the roll of the agricultural and local levies, which do not concern them at all.”¹¹⁷ He goes on to declare:

We order that all the people of this city [Alexandria] who operate agricultural domains in the countryside should not be liable for contributions (*syneisphorous*) to the crown taxes (*stephanoi*) and the harvest taxes (*epigraphai*) that are occasionally (*kata kairon*) established in nomes according to circumstances; moreover, that their possessions should not be taken into account for such collective contributions, (and) that any new regime of levy should also not affect them.¹¹⁸

The last phrases in particular seem to confirm the interpretation of the dispute over extraordinary harvest tax levies in 158–137 and 51/50 BCE described above. This decree exempted Alexandrian landowners from any such impositions of variable harvest taxes (*epigraphai*) and from any attempt to count their tax payments towards the collective sums occasionally imposed on members of the settler group (*katoikia*). Nevertheless, their estates were

subject to what the finance minister vaguely describes as “the duly established royal taxation.” This was presumably a fixed tax of one artaba per aroura or some similar rate.

This so-called artaba tax (*artabieia*) was the basic royal tax that applied to fiscally privileged cleruchic and temple land. When it was introduced is unknown. In the case of temple land, as noted above, it was purportedly abolished in 196 BCE and 118 BCE but each time reappeared soon afterwards. Temples traditionally had the right to collect their own additional harvest taxes or rents from their estates, which, at least in Upper Egypt, came increasingly under state control. Likewise, cleruchs took advantage of the absence of land taxes or the payment of low fixed rates to lease out their estates to tenant farmers for rent. The fiscal status of katoikic land in the Arsinoite and Herakleopolite nomes is sometimes described as one-artaba land (*monartabos*), a designation that continued into the Roman period.¹¹⁹ This is, to be sure, an example of continuity since the common Roman rate of one artaba per aroura and similar fixed rates clearly had Ptolemaic precedents. However, fiscal crises prompted the Ptolemaic state to exact higher fixed rates like the two-artaba tax (*diartabia*) and even to expand the variable harvest-tax regime to cleruchs through extraordinary levies in order to maximize revenue.

Fiscal reform in roman egypt

The next part of this chapter considers the taxation of arable land in the Roman period. The key reforms in the Julio-Claudian period were the abolition of the harvest taxes on private land and the extension of the fixed artaba tax. This thorough departure from the Ptolemaic fiscal regime was arguably the proximate cause of the transformation in the Egyptian agrarian economy during the first two centuries CE. One reason why previous scholars failed to grasp this difference is because they tended to extrapolate from the Fayyum region and the neighboring Herakleopolite nome. These areas have preserved most of the Greek evidence from the Ptolemaic period as well as a fairly large proportion of

the papyri from Roman Egypt. As [Chapter 3](#) has shown, the extent of cleruchic land in the Ptolemaic Fayyum was roughly similar to that of private land in the Roman Fayyum. The Arsinoite and Herakleopolite sources also suggest that cleruchic land in the Ptolemaic period was often charged the tax of one artaba per aroua or similar fixed rates. Hence previous scholars, even those who posit abrupt reform, have not questioned that there was continuity in the fiscal regime, as the Roman administration simply converted cleruchic land into full-fledged private property and continued to tax it the same way.¹²⁰

What has been seen as a reorganization of land tenure in Roman Egypt was actually a fiscal reorganization. Much has been made about the difference in Roman Egypt between private (*idiotikê* or *idioktetos gê*) and public land (*demosia gê*) that supposedly reflects the introduction of property rights based on the Latin concepts of *ager publicus* and *ager privatus*.¹²¹ The conceptual shift that this categorization signifies relates not so much to reforms in land tenure as it does to the way land was taxed. Traditionally, Egyptian land categories specified fiscal domains, above all by distinguishing royal land subject to direct royal taxation from temple land and estates allotted to soldiers, officials, or friends. Within the royal and temple domains private ownership coexisted with tenancy and other forms of land tenure, while most landholders were subject to the same variable harvest tax regime. The Roman administration tended to treat private and public land as separate categories in official tax registers because it extended the low fixed taxes to all types of private land, while maintaining the variable Ptolemaic harvest taxes or rents (*ekphoria*) only on public land, which had no legal owner besides the state. As the previous chapter has shown, land administered by temples was converted into public land, while privately owned temple land was recognized as private land and placed under the fixed-tax regime.

In other words, the Roman administration renounced the Ptolemaic claim to *ekphoria* from the owners of private land (*idioktetos gê*). Accordingly, it makes sense to translate the

term *ekphoria* as “rents” in the Roman period since it was used now exclusively for the dues from public land, which could generally not be sold, bequeathed, or mortgaged until the late Roman period. The term *kathekonta*, by contrast, was used for “taxes” on private land. This change admittedly signals a more favorable attitude to private ownership and even a movement away from the more intrusive claims of the Ptolemaic state, which mirrored an ideology of royal power that the Roman emperor did not entirely embrace. However, the abolition of these so-called rents on private land entailed virtually no discernible changes to the owners’ bundle of legal rights, so it would be misleading to regard this as the privatization of previously royal land.

The precise timing of the reforms remains elusive, but all indications point to the reign of Augustus or Tiberius. One of the earliest sources for the new fiscal status of private land is a tax register listing landholders, their holdings, and their liability in kind, datable to the reign of Tiberius (14–37 CE) and probably from the village of Bakchias in the northeast Fayyum.¹²² It distinguishes between the holdings of public cultivators, who were charged rents, and private landowners under the heading: “taxes of all private estates” (*kathekontôn idiotikôn edaphôn pantôn*), followed by the subheading “katoikic allotments” (*katoikikôn klerôn*).¹²³ The surviving portion of this section reports that there were 556 arouras of katoikic land that were all assessed one artaba per aroura. Thus katoikic land was here classified as a type of private land, implying that there was also non-katoikic private land (*idiotika edaphê*) in the Arsinoite nome by this date. More importantly, the main heading suggests that all private land was already charged fixed taxes (*kathekonta*), presumably at the rate of one artaba per aroura, just as in the surviving part about katoikic land.

There seems to be a break at the beginning of the Roman period in the evidence for harvest taxes from the Thebaid. The last datable receipts for land measurement are from the final year of Augustus’ reign, 14 CE. Vandorpe has shown that these texts record the assessment procedure for the Ptolemaic harvest tax (*epigraphê*) in the Thebaid.¹²⁴ It is

conceivable that their sudden disappearance was due to haphazard survival or changes in scribal practice, but it may indeed reflect fiscal reform. Receipts for the payments of grain taxes from the Thebaid survive continuously into the Roman period in large numbers. Unlike the Ptolemaic grain tax receipts, however, which often refer explicitly to the harvest tax (*epigraphê*), this term is entirely absent from the Roman corpus. The standard Roman formula mentions only the granary to which taxes were paid and the year of the harvest without any hint about the land's status or tax rate.¹²⁵ One exception is a Demotic receipt from the sixth year of Nero (59/60 CE) for the “artaba of the field” (*rtb* ³ḥ) tax, which presumably refers to the fixed rate of one artaba per aroura charged on private land in the Roman period.¹²⁶

The earliest evidence for the complete absence of harvest taxes on all types of private land comes from a land register dated to the year 47 CE.¹²⁷ This document, which has already been discussed in [Chapter 3](#), records individual landholdings in an otherwise poorly attested village in Upper Egypt called Krokodilopolis. The geographer Ptolemaeus mentions a village by that name in the area around Akhmim, ancient Panopolis, where the papyrus was purchased, and a small plot of land in the register belonged to the city of Ptolemais in the neighboring Thinite nome.¹²⁸ According to the heading of the document, it surveys private (*idiotikê*), temple (*hiera*), and royal (*basilikê*) land.¹²⁹ About 4,000 arouras, perhaps most of the village, is accounted for in the surviving portion. For each landholder in the list, however, only royal land is named explicitly, while the other categories are designated simply by the rate of taxation. Totalling the figures shows that: 56% (2,233 arouras) of the land was in the category taxed at the rate of one artaba per aroura; 21% (853 arouras) was taxed at $\frac{3}{4}$ artaba per aroura; only 1% was charged $\frac{1}{2}$ or two artabas per aroura; and the remaining 22% was royal land. A related fragment identifies one-artaba land as private land (*idiotika edaphê*), which makes it likely that the $\frac{3}{4}$ -artaba rate corresponds to temple land. One may assume that royal land was charged higher variable rents (*ekphoria*), as was the case for all types of public land in Roman Egypt.

Because of its early date, the document provides crucial support for the continuity of private land ownership in the Nile Valley from the Ptolemaic to the Roman period. What is more remarkable for the purpose of this chapter is that 78% of the land was subject to a low fixed land tax. This represents a radical departure from the fiscal status of private and temple land in Upper Egypt during the Ptolemaic period, when the much higher variable harvest taxes or rents were charged on almost all types of grain-producing land. If the $\frac{3}{4}$ -artaba land was indeed temple land, then it was probably temple land that was in private ownership, which is well attested during the Ptolemaic period. As noted in [Chapter 4](#), privately owned temple land is also found in the Roman period, notably in tax registers, where it was grouped with other types of private land and subject to the same fiscal regime. Augustan reforms tried to break up temple estates by confiscating most land that temples administered directly. The Krokodilopolis survey suggests that other temple landholders benefited from the abolition of harvest taxes because the Roman administration recognized their land as private property.¹³⁰

Perhaps the key to dating these fiscal reforms more closely is the edict of the prefect Tiberius Julius Alexander in 69 CE.¹³¹ He was responding to “requests concerning exemptions from tax and tax reductions...that they should be maintained on the terms on which the deified Claudius granted them exemption in what he wrote to Postumus [prefect, 44–47 CE]” and “complaints that properties bought by private persons in the interval between their being subject to tax by Flaccus and being exempted by the deified Claudius have since been subjected to tax.”¹³² Claudius' order merely confirmed privileges that had already been granted to landowners, most probably by Augustus or early in the reign of Tiberius. Uncertainty arose after the prefect Flaccus (32–38 CE) reintroduced the abolished taxes. The emperor Claudius as well as several subsequent prefects including Ti. Alexander sided with the landowners against those who wanted to maximize revenue and accordingly adopted a narrower interpretation of the orders from Rome.¹³³ The hypothesis that this passage relates to the

abolition of variable harvest taxes finds some support in the next section of the decree.¹³⁴ Here Ti. Alexander forbids officials from exacting variable harvest taxes (*ekphoria*) specifically on private land that had been purchased from the state between the time when Flaccus reintroduced them and when the emperor Claudius confirmed their abolition.¹³⁵ These passages suggest that an imperial decree sometime before 32 CE had done away with variable harvest taxes for those who owned their land outright and were not tenants of the state. The policy evidently met with some resistance, as local officials and even a few prefects sought to exact higher taxes from Egyptian landowners than Rome demanded.

Ti. Alexander adds a comment to his declaration that nicely illustrates the conceptual change underlying these Roman fiscal reforms: “It is an injustice, when the purchasers have bought property and paid the purchase price, to demand harvest taxes (*ekphoria*) from them on their own estates as if they were public tenants (*demosioi georgoi*).”¹³⁶ The phrase plays on the ambiguity of the term *ekphoria* with its strong connotation of rents. Flaccus and other officials in Egypt who favored the continuation of the Ptolemaic fiscal regime based on variable harvest taxes undoubtedly recognized the existence of private property – at least in the Roman provincial sense – and could, of course, distinguish private land from land leased to public cultivators (*demosioi georgoi*).¹³⁷ The same is true of the Ptolemaic rulers, who enforced the legal rights of landowners but had no scruples about taxing them in the same way as they did royal tenants in order to maximize their revenue. Purchasing land at Ptolemaic royal auctions always came with the stipulation that the owner would pay harvest taxes (*ekphoria*) to the state, while such land was taxed in the Roman period at the rate of one artaba per aroura.¹³⁸

What remains obscure is the relationship between the category known as katoikic or cleruchic land in the land registers of the Roman period and other types of private land charged the same tax rate. In several land registers, all types

of land subject to fixed taxes were grouped under a general heading as land cultivated by settlers (*katoikoi*) or by cleruchs (*klerouchoi*), as if these were simply terms for private landowners.¹³⁹ One register from the Hermopolite nome in the second century CE, soon to be published by Ruey-Lin Chang, shows that katoikic land (*katoikikê gê*) was the general heading for land that was taxed one artaba per aroura. Below this two subcategories appear: private land (*idioktetos*) and, confusingly, katoikic land (*katoikikê*). In other words, the latter was both a general heading and a subcategory under that heading.¹⁴⁰ Katoikic land in the narrower sense was probably the land derived from genuine katoikic land of the Ptolemaic period, which was still subject to special conveyance procedures. Yet the same term also came to be a general fiscal category because the Roman administration adopted the method and rate that the Ptolemies used to tax privileged katoikic land and applied them to all types of private land. Even as late as the third century CE, texts from the village Euhemeria in the northwest Fayyum call the tax on private land “the one artaba of the settlers (*katoikoi*).”¹⁴¹

It is accordingly with some justification that one speaks of continuity between the artaba tax (*artabieia*) on cleruchic and temple land in the Ptolemaic period and the tax of one artaba per aroura on private land in the Roman period. Nevertheless, neither state auctions of public land nor the recognition of fully alienable rights to cleruchic land can explain the vast amounts of private land in Roman Egypt charged the fixed rate. It would have required an unrealistic extent of cleruchic settlement in the Ptolemaic Nile Valley or an unimaginable upheaval in existing land-tenure arrangements in the Julio-Claudian period to produce the pattern seen, for example, in the Upper Egyptian village of Krokodilopolis in 47 CE and in other land registers discussed in [Chapter 3](#). The more likely explanation is that the Roman administration adopted the fixed-tax regime, which had applied in Ptolemaic Egypt only to privileged categories of land, and used it for all types of privately owned land without demanding any regular or occasional harvest taxes.

The distinction between private land paying fixed taxes (*kathekonta*) and public land paying variable rents (*ekphoria*) recurs repeatedly in land registers and taxation lists of the Roman period.¹⁴² In principle, village scribes were supposed to assess the quality of public land annually in order to establish the rate, just as in the Ptolemaic period. In practice, however, the rates often remained steady, and land surveys became less frequent.¹⁴³ Thus peasants were increasingly vulnerable to the effects of an unexpectedly small harvest. In his decree of 69 CE, the prefect Ti. Alexander accuses local officials of neglecting the annual inspection and instead charging peasants rents (*ekphoria*) at rates based on the average productivity over a number of years.¹⁴⁴ Likewise, a decree of the emperor Hadrian in 117 CE ordered that officials should tax public land according to its worth (*kat' axian*) and not subject it to inflexible rates.¹⁴⁵ By the second half of the second century CE, a new procedure is attested, whereby the landholder had to submit a formal request for an inspection (*episkepsis*) of the land in order to be granted tax relief due to unexpected flood conditions.¹⁴⁶ The switch from regular surveys of land productivity to these more responsive measures of assessment probably contributed to the tendency towards ossification of rents at fixed rates. By the end of the third century CE, fixed taxes finally replaced variable rents in Egypt completely, so public land became distinguishable from private land only in that the rate was higher.¹⁴⁷

The elimination of harvest taxes for owners of grain-producing land mirrors Roman reforms to the Ptolemaic proportional tax (*apomoira*) on vineyards and orchards. As noted earlier in this chapter, the Ptolemaic rate was $\frac{1}{6}$ of the harvest (or $\frac{1}{10}$ in the Thebaid) accompanied by an additional “aroura tax” (*eparourion*). The rate of the latter is attested only once in the case of a vineyard, but, assuming it remained fixed, one can estimate the total tax burden based on its approximate ratio to the proportional tax in other receipts. Depending on the harvest, the two taxes together were the equivalent in money or wine of about 7–12 artabas of wheat per aroura.¹⁴⁸ In the Roman period, the so-called proportional tax (*apomoira*) kept its name but was converted

from a harvest tax into a fixed land tax assessed per aroura. By the second century CE, and probably much earlier, the rate was set at 3,000 bronze drachmas for vineyards and 1,500 for orchards or 30 and 15 drachmas if paid in silver. The aroura tax (*eparourion*) was typically fixed at 2,000 drachmas in bronze or 6 drachmas and 4 obols in silver per aroura.¹⁴⁹ The 2:3 ratio of the aroura to the proportional tax for vineyards and 4:3 for orchards represents a change from Ptolemaic Egypt, where the king's proportional share of the harvest constituted more of the total tax burden.¹⁵⁰ The amount paid under the fixed-tax regime during the Roman period – the money equivalent of about 3 artabas of wheat per aroura for vineyards or 1.8 for orchards, not including minor fees and taxes in addition to the proportional and aroura tax – also represents a reduction of the burden in real terms.¹⁵¹

Incentives for land investment

Previous scholars have not recognized what an impact this transition from a harvest-tax regime to a fixed-tax regime must have had on the agrarian economy. Under the harvest-tax regime, taxes varied at least notionally according to the predicted harvest. Land that was not flooded or was otherwise unproductive might be moved to a lower fiscal category or exempted altogether from taxation that year. Such a system entailed less risk for the cultivators but it also meant that the return on their investment in the productivity of the land or in the reclamation of new land would be captured in large part by the state. On top of that, one has to bear in mind the extraordinary costs of organizing and monitoring the assessment of harvest taxes in order to prevent unfair distributions and corruption by local officials. Under the fixed tax-regime, on the other hand, the taxes were assessed on the area of land rather than its productivity, which made annual land surveys less important. That means that landowners would keep any long-term increase in the yields. They would have more incentive to bring unproductive land under cultivation.

The harvest-tax regime arguably fostered small-scale subsistence strategies of cultivation and discouraged productive investment. It would have protected the smallholding proprietors in the Ptolemaic period from complete annihilation due to unexpected floods or damage to their land, but, at the same time, it reinforced the social structure by redistributing the fruits of investment into the hands of the king, his officials, who siphoned away revenue, and hereditary priestly elites, who benefited from the privileged status of temple estates. The harvest taxes also made it complicated for successful landowners to manage large estates by leasing out land to private tenants. There were certainly no legal barriers to leasing the land, and such lease contracts do survive. If the state already adjusted taxes annually to capture 40–60% of the yield, then there would not have been much margin of profit for private tenancy. Under a fixed-tax regime, the landowner would be responsible only for the fixed artaba tax and could adjust the private rate of rent according to the supply and demand of tenants.

One expects that the transition from the harvest-tax regime to the one-artaba tax regime would have caused people to invest more in land, that agricultural land and labor markets would become more active, and that productivity per unit of land would increase. Several indicators seem consistent with these hypotheses. First, there is the increasing use of irrigation technologies for reclamation and the improvement of agricultural yields in the first and second centuries CE. Wilson argues convincingly against traditional views about technological stagnation in the ancient world and points to a period of major agricultural innovations that spread in the Roman empire during the first and second centuries CE.¹⁵² It is important to distinguish between technological invention and its diffusion because inventions often require innovations that make them widely available as well as the right economic and social conditions before they make an impact on productivity.¹⁵³

The adoption of water-lifting technologies in Egypt was probably a response to new economic incentives created by

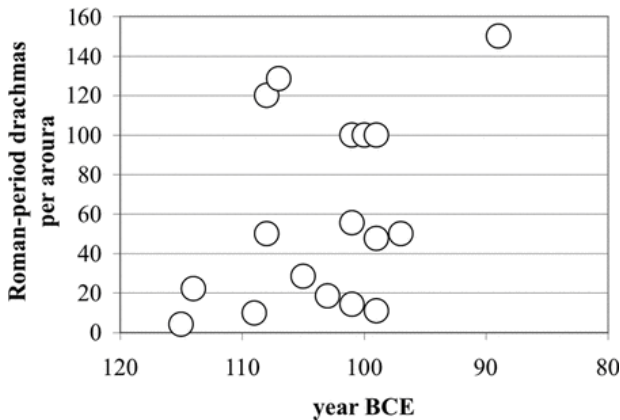
the low fixed taxes on land. Oleson's review of the papyrological evidence suggests a number of new irrigation machines coming into use in Egypt during the first and second centuries CE.¹⁵⁴ The traditional ancient Egyptian water-lifting device was the *shaduf*. The water-lifting device known as the *saqqiya* may have been invented by scientists in Alexandria during the Ptolemaic period but came into use more extensively on private estates in Roman Egypt. Bonneau argues that the widespread use of the *saqqiya* and *shaduf* boosted productivity in the second century CE.¹⁵⁵ Some scholars have suggested periods of expansion for the *saqqiya* in the fourth and sixth centuries CE, but it is problematic to assess quantitative changes on the basis of references in haphazardly surviving archives, particularly when the later sources commonly derive from archives dealing specifically with the management of large private estates.¹⁵⁶ Rathbone argues that sophisticated irrigation machines were already in use in the Fayyum by the third century CE, an innovation that he attributes to the growth of large estates in that period. Rathbone's fieldwork in the Fayyum, whose results are still unpublished, suggests the pot used in *saqqiya* stations was widespread on Roman sites by the third century CE.¹⁵⁷ The earlier evidence for the machines is a problem because terracotta pots may have replaced earlier wood buckets to carry the water in the first or second century, so they are probably underrepresented, though the switch to terracotta presumably made them cheaper to install.¹⁵⁸

A direct indication of higher land values is the sudden jump in the price from the Ptolemaic to the Roman period. Baer has shown that sales of arable land from the New Kingdom onward, when the harvest tax was used, were at low prices relative to other commodities.¹⁵⁹ One has to be cautious with such sparse evidence, but the median based on all nine of Baer's land prices (c. 1350–620 BCE) and all eight emmer and barley prices is 8.5 artabas per aroura. This is fairly close to the Ptolemaic price of 5 artabas of wheat per aroura discussed below, especially since barley or emmer were cheaper crops.¹⁶⁰ Baer suggests that the low cost of land might stem from a chronic labor shortage, leaving

abundant land available throughout Egyptian history, but over the long run this pattern seems unlikely, and his population estimates based on carrying capacity are unconvincing.¹⁶¹ Menu attempts to explain the low price as a reflection of the land's legal status. She argues that buyers had rights of usufruct but not formal ownership, which the king or the temple always retained.¹⁶² She is right that land prices are partly a function of the fullness of the rights being conveyed, but she does not explain how the state's or the temple's theoretical ownership would have actually limited these rights and thereby depressed the buyer's expected returns and the land's sale price. It would seem rather that the harvest tax was the most burdensome imposition of the state or the temple on the landholders within their domains.¹⁶³

The rise in price from the Ptolemaic to the Roman period coincides with the abolition of harvest taxes on private land. There are only nineteen Ptolemaic land prices, which come almost exclusively from the Pathyrite nome in Upper Egypt and, with one exception, from the years 123–89 BCE.¹⁶⁴ They range from 500 to 18,000 bronze drachmas (*chalkou drachmai*), with a median price of 6,000 drachmas. The land's owners had a full bundle of property rights, but the land was assessed harvest taxes (*ekphoria*). From the Roman period, thirty-five prices of grain-producing land are datable before 200 CE. They are chronologically and geographically more diverse than the Ptolemaic data but are still limited because most stem from the Arsinoite, Hermopolite, and Oxyrhynchite nomes of Middle Egypt. Such land was generally charged a fixed rate of one artaba per aroura.¹⁶⁵ Unfortunately, it is impossible to control for the land's quality. The prices of explicitly derelict land (*hypologos*) as well as vineyards and orchards have been deliberately excluded from both the Ptolemaic and the Roman series.

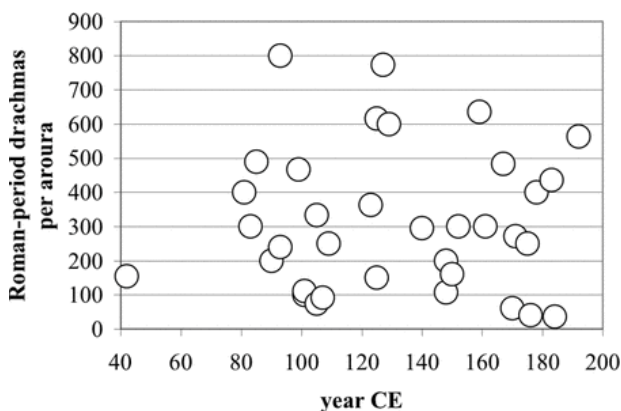
Figure 5.1 Ptolemaic land prices



It requires some conversion in order to make the Ptolemaic prices comparable with the silver drachmas used in the Roman period. The most reliable method, which is adopted in [Figure 5.1](#), is to convert them using the median wheat price contemporary with each series, allowing the Ptolemaic prices to be denominated in the same currency as the Roman prices represented in [Figure 5.2](#). The calculations suggest a ratio of late Ptolemaic bronze drachmas to early Roman silver drachmas of about 120:1. The alternative method, converting the Ptolemaic bronze drachmas into Ptolemaic silver drachmas and then into Roman silver drachmas, is plagued by too many unknown variables. The theoretical ratios of Ptolemaic bronze to silver drachmas cited in the penalty clauses of late Ptolemaic contracts were 300:1, 400:1, and 600:1.¹⁶⁶ The attested direct conversions of bronze to silver drachmas during the period 115–79 BCE fluctuated around 450:1.¹⁶⁷ Assuming equal weight of the drachmas and no fiduciary value, bronze to silver is thought to be valued at about 125:1 based on the metal content. This is only a minimum because the bronze drachma was probably overvalued and heavier than the Ptolemaic silver drachma. It is unclear how to relate denominations in the textual sources with the actual coins whose weight and purity changed over time.¹⁶⁸ One hopes that, future discoveries will bring some clarity to these late Ptolemaic monetary reforms. For the time being, using the price of wheat as a control variable is the only way to ensure

comparability with the Roman prices.

Figure 5.2 Roman land prices



The most important finding based on this evidence is the low price of land in Ptolemaic Egypt. Its median price was almost six times less than it was in the Roman period. If one uses average prices, its relative value rises slightly, making it about five times cheaper than land sold during the Roman period. Reckoning the prices of land in artabas of wheat rather than drachmas makes it easier to grasp the annual return on investment. Ten drachmas was the median price of wheat during the period 40–200 CE, for which there are Roman land prices. The median wheat rent in the Arsinoite, Oxyrhynchite, and Hermopolite nomes (from which most land and wheat prices also come) was seven artabas per aroura in the period 40–200 CE, from which one should deduct one artaba if the landowner had to pay the tax. Thus the return would be about 20–25% per year, and it would take four or five years to recover the initial investment. If the owner cultivated the land himself, if one assumes yields of ten artabas per aroura, his return may have been something like 30% without counting the cost of his labor.¹⁶⁹

There are fewer wheat rents from the Ptolemaic period for privately owned land charged royal or temple harvest taxes that would be comparable to the land prices from Upper

Egypt in [Figure 5.1](#). As one expects in view of the heavy tax burden, there were probably fewer cases of private tenancy and lower rents. The evidence is insufficient to support firm conclusions, but what there is suggests that the return on land was perhaps 50% in the Ptolemaic period, if one assumes that it could be leased for 2½ artabas per aroura after the harvest taxes were paid.¹⁷⁰ Yet this assumption is probably too optimistic. Often the rent may have done little more than allow the landowner to satisfy his tax obligation.¹⁷¹ The margin for profit and the availability of tenants were probably too limited to allow most landowners to lease regularly. If the owner cultivated the land himself, assuming yields of ten artabas and harvest taxes of four to five artabas per aroura, his annual return may have been 100% or more not including overhead costs such as labor, so that the cost of the land could be recovered after just one harvest. Admittedly, this is a puzzling conclusion that may simply reflect the inadequacy of our sources for rents, yields, and prices, which require more systematic study.

Maresch has interpreted the Ptolemaic land prices quite differently, but his conclusion raises more problems than it solves.¹⁷² He starts from the assumption that the difference in the price of land in Ptolemaic and Roman Egypt is unrealistic. Unfortunately, he uses misleading price ranges for his calculations rather than medians or means.¹⁷³ The errors are magnified when he uses these ranges to make his conversions. Thus he reckons incorrectly that the Ptolemaic prices should be in the range of 40,000–160,000, if they were to correspond to Roman prices.¹⁷⁴ To rectify the discrepancy, Maresch proposes that the bronze drachmas (*chalkou drachmai*) used to denominate land prices were on the silver standard, so their value was sixty times greater than the so-called accounting drachmas used to denominate other prices such as wheat. The correlation between his adjusted range of 60,000–1,080,000 accounting drachmas and his expected range of 40,000–160,000 allegedly constitutes “a somewhat smooth result.”¹⁷⁵ Yet when one multiplies each Ptolemaic land price by sixty, the median becomes 360,000 (mean 457,633) drachmas per aroura. In terms of wheat that is 300 artabas (mean 342 using the

mean wheat price) per aroura. The Roman median was 29.5 and the mean 28.7 artabas per aroura. In other words, instead of being five or six times less expensive in the Ptolemaic period, land would have cost ten or twelve times more than it did in the Roman period. Making such a speculative leap, therefore, turns out to provide no help in explaining the apparent rise in land prices.

The low cost of land in the Ptolemaic period is consistent with the phenomenon that Baer and Menu identified in the millennium prior to Macedonian rule. The harvest tax was a traditional feature of Egyptian society, going back at least to the New Kingdom, and served as a fundament of the redistributive royal and temple economy. There are, unfortunately, too many unknown variables to assess and compare the role of taxation in the formation of land prices from earlier periods. The abolition of variable harvest taxes at the beginning of Roman rule and the sharp increase in demand for grain-producing land seem to be more than a coincidence. The magnitude of the price differential and the apparent decrease in the marginal returns to investment in the Roman period leave some doubts about whether fiscal reform alone can explain the transition. It is difficult to disentangle its effects from other interrelated factors. Improvements in the enforcement of property rights under Roman rule may also have contributed. So too could population growth, by making land more scarce. Increasing profitability of agricultural production due to market integration or to growing demand from urban and overseas consumers may likewise have raised the price of land in Roman Egypt.

The emergence of private estates in the Roman period is markedly different from any accumulation of land by private individuals under Ptolemaic rule. Unfortunately, the evidence for the size of estates in the Ptolemaic Nile Valley is inadequate to enable one to make direct comparisons of landholding patterns. On the other hand, it seems to be an uncontroversial conclusion, based on the sources that are available, that only groups who received allotments or privileged fiscal status from the king stand out as wealthy in

the Ptolemaic period. Among these are obviously the recipients of gift estates and cleruchic land. As the previous chapter demonstrated, holding priestly offices may have helped some priests acquire land, but it was also possible to buy and sell private estates.¹⁷⁶ There is not much evidence for the size of private (non-cleruchic) estates, but the data available suggest that those larger than thirty-five arouras were rare.¹⁷⁷ Ptolemaic lease contracts were often drawn up between parties with similar social status. Many explicitly refer to the payment of the harvest taxes by the tenant or landowner.¹⁷⁸ Starting with the early Roman period, there was evidently an explosion in the number of private lease arrangements, as many landowners sought lower-status tenants to cultivate their estates, a trend that may have been caused by the new fiscal status of private land and the growing size of private estates.¹⁷⁹

Quantitative assessments of landholdings in the Roman period are also problematic since attested plots rarely coincide with total landholdings. The only exception is for the later metropolitan landowners in the Hermopolite nome during the fourth century CE thanks to an extensive survey of their estates in almost the entire nome. It demonstrates that there were by that time local landowning elites with estates well above one hundred arouras.¹⁸⁰ It is probably hazardous to project their landholdings back onto earlier periods, but they were the successors of similar landowning urban elites, who took over responsibility for performing official duties as liturgies in the nome metropoleis in the early Roman period.¹⁸¹ Landowners of this status in the Oxyrhynchite nome, for example, seem to have possessed estates in the first and second centuries CE that were considerably larger than any possessed in the Ptolemaic period by a landowner without royal patronage or hereditary priestly status.¹⁸²

Finally, the general rise in population and urbanization in Roman Egypt is an indirect sign of increasing overall agricultural productivity. The fiscal changes in the early first century CE arguably created the economic conditions for urbanization. Lower taxes enriched landowners, increasing expenditure in the nome capitals and possibly creating a

pool of capital that could stimulate urban production. The fiscal reforms that abolished harvest taxes also created a local urban elite that gradually took over public administration at their own expense as an indirect form of taxation. For promoting economic growth, at least in aggregate terms and perhaps initially even in terms of intensive per capita growth, the Roman fiscal regime was better because it replaced direct taxes on productivity with fixed taxes on land and persons.

Under the Roman fiscal regime, landowners grew rich and a number of cities in the countryside attained a population over 15,000.¹⁸³ Some evidence even suggests that these cities were not merely the consumers of this increasing economic surplus but also contributors through increasing craft specialization.¹⁸⁴ By the third century CE, the Ptolemaic royal economy was largely unrecognizable, and Egypt can be understood within an empire-wide pattern of provincial urbanization and economic development.¹⁸⁵ What this tells us is that fiscal institutions had a profound effect on economic activity. Social changes as profound as the ones observable cannot be reduced to taxation alone, but the shift in fiscal regime was more revolutionary than any of the land reforms that the Romans may have introduced.

Comparative perspectives

In the realm of pre-modern fiscal and agrarian history, no places have received more attention than England prior to the Industrial Revolution and France under the *ancien régime*. The issues at stake in understanding why France had a different trajectory in economic development are broadly the same ones addressed in this book: the relationship between population density and land privatization, between fiscal regimes and investment, and between administrative structures and redistribution. The point to be made here is that the French *taille* broadly resembles the Ptolemaic harvest tax inasmuch as the peasant paid a higher rate if he improved his land, while the Roman one-artaba tax in Egypt was a fixed rate, more like the English land tax. French fiscal

policy could not be easily changed because it was embedded in political relations between the rulers, tax-privileged nobles, and tax-paying peasants, just as in Ptolemaic Egypt. The method of exacting the *taille* from French peasants goes a long way towards explaining the persistence of small-scale peasant agriculture with low capital investment and frustrated attempts at an enclosure movement, in contrast to England.

Adam Smith commented on the relative merits of the English fixed land tax versus the French taxes that co-varied with the rental value of the land. He noted that the English fixed tax, whose rate had been prescribed in 1692, created inequalities over time, as landowners that made improvements to their land paid lower taxes in real terms than owners of land that became less productive. He argued, however, that such taxes provided positive incentives for agricultural productivity in contrast to the system of taxation that varied according to the real rent of the land, which prevailed in France and elsewhere in continental Europe:

A tax upon the rent of land which varies with every variation of the rent, or which rises and falls according to the improvement or neglect of cultivation, is recommended by that sect of men of letters in France, who call themselves œconomists, as the most equitable of all taxes. All taxes, they pretend, fall ultimately upon the rent of land, and ought therefore to be imposed equally upon the fund which must finally pay them.¹⁸⁶

While he agreed that variable taxes created more equality among the peasants subject to that regime, he enumerated abuses and inefficiencies that such a fiscal system generates, including the greater expense of assessing variable taxes relative to assessing fixed land taxes. Finally, he concluded:

The discouragement which a variable land-tax of this kind might give to the improvement of land, seems to be the most important objection which can be made of

it. The landlord would certainly be less disposed to improve, when the sovereign, who contributed nothing to the expence, was to share in the profit of the improvement.¹⁸⁷

Different manifestations of variable land taxes based on the valuations of the land prevailed in other pre-industrial European countries. Smith cited several manifestations of variable land taxes in eighteenth-century Europe, in some cases assessed by a percentage of the actual rent (or estimated rent if the owner cultivated the land) as in Venice, and in others by a periodic survey and valuation of the land, as in Prussia and Silesia. Systems of taxing actual produce such as the tithe or some such percentage of the harvest prevailed on church estates as well as in some Asian countries, and they had the same effect as a tax on the rent or the valuation of rent.¹⁸⁸

In the case of France, Smith lays considerable blame on the *taille* or variable land tax for the weakness of its state finances.¹⁸⁹ Contemporaries in France also condemned the *taille*. Decades before Smith, in 1707, the French military engineer Vauban published a treatise advocating the abolishment of the *taille* and other taxes in favor of a single 10% flat tax. He wrote:

Someone who could keep one or two cows and some sheep with which he could improve his farm or his land is forced to do without them in order not to be crushed by the *taille* in the following year, as he most certainly would be if he earned a little something and it was seen that his harvest was a bit more abundant than usual. That is the reason...that he wastes the little land he has by working only half of it out of fear that if it produces what it should produce, having been well manured and cultivated, they will use the opportunity to impose double the *taille*. It is therefore obvious that the main cause of the diminution of goods in the countryside is the failure of cultivation and that this failure stems from the manner of imposing and collecting the *taille*.¹⁹⁰

Total taxes in England may well have exceeded the tax burden in France, at least by the eighteenth century, but this was partly because nobles, officials, and urban elites in France had considerable exemptions.¹⁹¹ The recent literature suggests that the French monarchy was less despotic and economically stagnant than previously thought since the king had to contend with opposition from elites in raising revenue.¹⁹² Even of the taxes the state did raise, Beik estimates that almost 50% of the revenue in seventeenth century Languedoc may have been siphoned off by officials and redistributed in the local economy.¹⁹³ A similar trend in the scholarship on the Ptolemaic monarchy in Egypt questions the extent of royal power, emphasizing instead the constraints imposed by local elites and by the local consumption of tax revenue.¹⁹⁴

What both Ptolemaic Egypt and *ancien régime* France had in common was that the incidence of taxation fell disproportionately on the peasants and small-scale proprietors in a manner that discouraged economic investment. The plight of the peasantry in France has been a persistent refrain in modern historiography. Some have argued that population growth in the sixteenth and seventeenth centuries eroded feudal institutions and promoted the privatization of land based on logic similar to the Boserup-Demsetz model described in [Chapter 2](#).¹⁹⁵ Others point to political factors, which can better explain the different outcomes in response to similar pressures in France and England.¹⁹⁶ In France, peasants came away with a fuller bundle of legal rights to their land but became increasingly impoverished as the population grew and plots fragmented. Because nobles, officials, and urban elites had exemptions from the *taille*, they were willing to pay higher prices for land than other peasants, which generated a great wave of land sales from the 1550s to the 1700s. The monarchy probably did not anticipate, or at least was powerless to stop, the so-called “defection of the bourgeoisie” and of other fiscally privileged groups into agriculture, creating pressure for the state to raise even higher taxes on those landowners who were not entitled to fiscal privileges, which

only reinforced the pressure on them to sell. Only limiting exemptions for elites, which the reformer Colbert sought to do in the early 1700s, could protect the peasantry, since reducing taxes would have caused the state's finances to collapse.¹⁹⁷

The French monarchy depended on the high variable tax on the landowning peasantry because it was more difficult to tax the nobility, officials, and urban elites. The English monarchy found it easier to tax elites because it provided them with parliamentary representation in return. Thus decline of the peasantry through the privatization of land and the emergence of large estates did not threaten England with fiscal crisis to the same extent. This transformation in agrarian social relations in England meant the creation of an active market for land and labor that probably contributed to aggregate agricultural output and may have prepared the way for the Industrial Revolution.¹⁹⁸ There were many interrelated factors at work, but the unique tax incentives emphasized by Adam Smith may partially account for the divergent economic performance between England and continental Europe in this period.

The comparison with taxation in Greco-Roman Egypt is meant to be provocative and to elucidate models for analyzing the variable and fixed land-tax regimes. Fixed taxes in Roman Egypt accompanied the growth of larger private estates managed with the help of private tenancy and wage labor, which seems to have transformed the traditional Egyptian peasant economy that had been based on harvest taxes and less formal enforcement of property rights. Further exploration of these issues is relevant to the discussion in [Chapter 7](#) of the underlying political logic of fiscal reform in Egypt. It suffices to note that there is likely to be a correlation between the structure of political regimes and their fiscal institutions. Naturally, the transition from Ptolemaic to Roman Egypt was not one from an absolutist to a constitutional monarchy. Such concepts are not directly applicable, but somewhat analogous differences in the distribution of political power did accompany the fall of the

Ptolemaic dynasty.

Contemporary with these developments in early modern Europe, Japan underwent enormous economic changes under the Tokugawa Shogunate (1600–1868). The preceding period of warfare had created the demand among regional overlords for fiscal bureaucracies to extract resources from peasants. Two major developments in land taxation of the early Tokugawa period provide insights into the issue of fiscal reform posed in this chapter. First, there was the spread of the harvest tax (*kemi* system) at the beginning of the Tokugawa period, which replaced earlier, more predatory fiscal policies (*sonmen* system). Later, the costly harvest-tax assessments were abandoned and a fixed tax (*jômen* system) was introduced. Based on the rich data for taxation rates from one domain, the Kaga, three different fiscal regimes can be analyzed against the backdrop of changing political structures and economic performance. One should be cautious because fiscal regimes prior to and early in the Tokugawa period were diverse, so the Kaga domain was not necessarily typical. Nevertheless, the ultimate adoption of the fixed-tax (*jômen*) regime, with its incentives for investment, may have contributed to the growth of the agrarian economy in Tokugawa Japan.

The so-called *sonmen* fiscal regime prevailed prior to the Tokugawa unification. In theory, the Japanese dynasts confiscated the entirety of peasants' harvests and relinquished only whatever amount was deemed necessary for their subsistence and for other unanticipated costs.¹⁹⁹ The dynasts' confiscation of surplus at the highest rate possible within the constraints of their measurement and enforcement capabilities thereby removed any purely economic incentive for peasants to produce harvests in excess of their subsistence needs. To the extent that the *sonmen* system worked according to plan, it maximized the dynasts' immediate revenue at the expense of future productivity. However, the practical limitations of measurement and enforcement meant that tax rates may have remained relatively stable over time and farmers would have managed to cultivate some land illegally without

paying taxes. The amount of the peasants' harvest was an estimate based on land surveys that were unlikely to be accurate, discrepancies in the size of landholdings were even tacitly acknowledged. In this situation peasants had incentive to cultivate additional land if they could conceal it, which also remained true during the subsequent Tokugawa period.²⁰⁰

The harvest-tax regime (*kemi* system) spread during the early Tokugawa Shogunate. The revenue from taxation, as in the previous period, went to the local dynasts or their warrior retainers, the samurai, supporting the growth of castle towns where these warriors were forced to live. Taxes came to be expressed as a percentage of the total harvest, and, beginning around 1600, inspections of the land to determine the expected total harvest became common in many domains. The method was to sample the harvest of a few fields of various categories in each village and to apply a standard rate based on that sample harvest to all peasant holders in that village.²⁰¹ Brown's comparison of the tax rates relative to estimated total yield before and after the sampling inspections were introduced shows that the burden of taxation decreased significantly under the *kemi* system. The sampling method and the decrease in rate may mean that the reforms were intended to alleviate excessive taxation under the confiscatory *sonmen* system. He argues, however, that officials in the Kaga domain did not anticipate the decline and that it was caused by the inefficiency of the harvest-tax system. He cites the following inefficiencies as causes of its low return: the ignorance of the itinerant surveyors about local conditions; the lack of time to conduct thorough surveys; the duplication of survey efforts by the agents of multiple overlords; and the inability of supervisory officials to check the accuracy of the survey results. Moreover, since those entitled to the revenue were living in the cities, villagers were presumably able to bias the assessments in their favor.²⁰²

The ossification of productivity estimates effectively created fixed taxes known as the *jômen* system during the early eighteenth century. Previous generations of Japanese

Marxist historians assumed that this *jômen* system was a continuation of a single confiscatory fiscal regime that prevailed throughout pre-modern Japanese history, which subjected peasants to rigorous control and captured nearly all of the total surplus of agricultural production. More recently, another school of historians has emphasized economic growth in the Tokugawa period driven partly by fixed taxes on land.²⁰³ Quantification is difficult because few now believe the official estimates of the total village yields, but if one assumes that whatever biases they had remained constant as long as they were being updated, then they may serve as a meaningful index of changes.²⁰⁴ Brown has shown that the transition to this fixed-tax regime in the Kaga domain was preceded by an initial increase in the tax burden from the historic lows under the harvest tax (*kemi*) regime, though not quite to rates as high as under the earlier *sonmen* system.²⁰⁵ Smith's analysis of the fixed tax rate from the 1650s to the end of the Tokugawa period, again largely based on the Kaga domain, suggests that it subsequently remained stable. More importantly, from about 1670 onward the land was no longer surveyed periodically to assess its productivity, so by the nineteenth century peasant proprietors were still paying fixed taxes under the *jômen* system based on estimated yields from a century earlier, despite the fact that the land's productivity probably had risen.²⁰⁶

Demographic and economic expansion in Tokugawa Japan is now widely recognized. There are of course problems with the data, especially for the period prior to 1720.²⁰⁷ The areas of land under cultivation are reported only in 1730 and 1872. Land surveys to assess total harvests were discontinued during the eighteenth and early nineteenth century, and the accuracy of the earlier estimates is probably poor. The population estimates for the early Tokugawa period are particularly misleading. There are several census counts from 1720 to 1872 that indicate slow growth at the rate of about 0.1% annually from 31 million to 33 million when adjusted upward by 20% for undercounting. However, most Japanese historians accept a low figure of 12 million inhabitants in 1600. There is evidence for growth in the

Tosa domain, but it was traditionally underpopulated.²⁰⁸ Even if some expansion is likely, the population explosion in the seventeenth century has only weak empirical support.²⁰⁹ Miyamoto contrasts the subsequent period, when population remained relatively stable but agricultural production is thought to have increased, generating intensive per capita economic growth.²¹⁰ The evidence for this second period, after the fixed tax was introduced in the early seventeenth century, seems stronger.

Comparing agrarian economies of the early modern period provides an interesting and unusual perspective on the fiscal regimes of Ptolemaic and Roman Egypt. Adam Smith's criticism of France's high variable taxes on agricultural land could just as well have been about Ptolemaic harvest taxes and his praise of England's land taxes about reforms in Roman Egypt. Yet this only shows how firmly fiscal regimes were embedded within political regimes. As in Ptolemaic Egypt, there was a vicious cycle in old-regime France of high taxation, inefficient bureaucracy, social unrest, privileges granted to politically influential elites, and exploitation of non-elite landowners. The unification of Japan under the Tokugawa Shogunate similarly marks the end of a period of incessant war when domain lords imposed intrusive fiscal regimes and the same dynamic seems to have prevailed. What could end such cycles was the maintenance of stability and more inclusive political cooperation. During the so-called Pax Tokugawa, taxes decreased and ultimately became fixed, ushering in a period of rapid population growth and economic development. To what extent the Roman empire and its unification of the Mediterranean had a similar impact in Egypt will be explored in [Chapters 7 and 8](#).

Conclusion

In summary, until recently our knowledge of the Ptolemaic fiscal regime that applied to land was largely limited to the Fayyum. Despite the fact that large numbers of receipts survive from Upper Egypt, their interpretation was uncertain

owing partly to the lack of more detailed land-survey texts with which to compare them, such as we have from the Fayyum. The recently discovered land survey of the Apollonopolite nome from the late second century BCE has radically changed that situation.²¹¹ It provides confirmation of the analysis of the terminology for harvest taxes in the Nile Valley receipts which Wilcken proposed and Vandorpe recently elaborated.²¹² Hence one can now compare land taxation in the Fayyum and the Nile Valley in the same way that the land tenure regimes were compared in [Chapter 3](#).

Whereas land tenure institutions were conservatively embedded in the local ecology, fiscal policy was superimposed by the authorities and was hence more susceptible to political manipulation. It is this difference between fiscal institutions and land tenure that also explains the relative uniformity of fiscal institutions within Ptolemaic Egypt. By comparison with land-tenure variations, this chapter has shown that agricultural taxation was relatively consistent throughout Egypt. Admittedly, there were differences in terminology and administrative practice between the Fayyum and the Nile Valley, while the Delta presumably had its own regional peculiarities.²¹³ However, such differences conceal broad similarities that are evident between the taxation of royal land in the Fayyum, where peasants had communal rights, and the taxation of private land in the Nile Valley, where owners freely bought and sold grain-producing land within the domains of the royal and temple administration. In both cases the primary producers paid annual sums in kind at relatively high rates to the royal granary that could be adjusted according to soil and flood conditions determined by an annual land survey conducted by local officials.

The status of cleruchic and certain temple landholders was more ambiguous. Some evidence suggests that both were charged only a fixed artaba tax, but other sources reveal that their status was complex. Temples in Egypt had their own estates, from which they were accustomed to collect harvest taxes or rents from cultivators whose tenure could vary from short-term contractual agreements to private

heritable and transferable rights. When the Ptolemies resorted to taxing this land, they extended the low fixed rate of the artaba tax. According to this system, the cultivators would pay the artaba tax to the state granary and rent or harvest tax to the temple. However, it seems that the state took over the direct collection of the harvest taxes from certain temples in the Thebaid and thus undermined their independence and centralized revenue. Even cleruchic land was occasionally subjected to variable harvest taxes. As to members of the settler group (*katoikia*), the Ptolemaic finance minister imposed special levies that had to be distributed among them by imposing either a variable harvest tax or an additional fixed tax.

The early Roman administration in Egypt took the radical step of extending the artaba tax to virtually all private landowners. This amounts to an abolition of harvest taxes for private landowners, whereby this fiscal regime was limited to public land where peasants were merely tenants of the state. It is possible to see continuity insofar as some cleruchic and temple land, which had already been in de facto private ownership and had already been assessed the artaba tax, continued to pay taxes this way. However, the vast amount of private land in the Nile Valley in the Roman period now paying only the artaba tax had almost certainly been subject to higher variable harvest taxes in the Ptolemaic period. The reforms were made in the reign of Augustus or Tiberius, some time before 32 CE, but uncertainty about who could still be charged the higher rates persisted for several decades. This enormous shift would have enhanced the incentives for the reclamation of new land and investment in private estates. The next chapter will explore what effect it had on the economic value of obtaining offices in temples, the army, and royal administration, which had conferred access to considerable wealth and privileges in the Ptolemaic period.

¹ Wilcken (1899); Wallace (1938); Préaux (1939); Packman (1968); Muhs (2005b).

² Bowman and Rathbone (1992: 112); Jördens (2009: 107–

10).

- ³ E.g. Rostovtzeff (1910: 114–16).
- ⁴ De Neeve (1985: 92–8); Rathbone (1991: 394–403); cf. Kehoe (1992: 6).
- ⁵ Popkin (1979) is a classic analysis of economic rationality within peasant societies.
- ⁶ Royal revenue from the production of oil furnishes further evidence for the distinctive Ptolemaic fiscal regime but falls outside the scope of this study: see Préaux (1939: 65–92); Bingen (2007 [1978a]: 170–83); cf. Wallace (1938: 184–7).
- ⁷ P. Rev. Laws (259/258 BCE; Arsinoite?): columns 36–37 = W. Chr. 249 = C. Ord. Ptol. 17–18 contain the decree of 263 BCE; column 33, line 9, to column 34, line 1, has further instructions about the survey and registration of temple and non-temple land according to these ordinances.
- ⁸ The Memphis decree of 196 BCE, OGIS I 90 = SB V 8299 = Spiegelberg (1922), line 15, and the amnesty decree of 118 BCE, P. Tebt. I 5 = C. Ord. Ptol. 53, lines 50–53, confirmed the temples' rights to their revenue from the *apomoira*, which officials had presumably taken.
- ⁹ Clarysse and Vandorpe (1998: 8–14) reject earlier arguments that Ptolemy II diverted the *apomoira* from the Egyptian temples to the new cult: Wilcken (1899: 157–61); Otto (1905: 340–56); Préaux (1939: 171–81); Bingen (2007 [1978a]: 169–70). Insofar as Arsinoe's cult was incorporated into the temples, these positions are not wholly inconsistent; cf. Vandorpe (2006: 166).
- ¹⁰ P. Rev. Laws (259/258 BCE; Arsinoite?): col. 24, lines 4–13; Schäfer's comments on P. Köln V 220; Kaimio's excursus in P. Hels. I, pp. 122–6; Clarysse and Vandorpe (1998: 19–30).
- ¹¹ Though usually in money, it was sometimes paid in grain and called “grain rent” (*sitikon ekphorion* or *sitikê misthosis*), but conversion into cash (*metakeimenôn eis argyrikous phorous*) seems to have been possible; P. Tebt. I 24 (117 BCE; Ptolemais Euergetis, Arsinoite), line 3; BGU XIV 2440, 2441, 2444, 2446, 2449, 2450 (II or I cen. BCE; Herakleopolite), *passim*; for conversion, see BGU

- XIV 2241, lines 28–32; perhaps grain was actually grown on such land, e.g., “vineyards sown with grain” (*en ampelois sitosporoumenoïs*) in P. Berl. Salm. 9 (86/85 BCE; Herakleopolis), line 4; Maresch (2009: 128–9).
- 12 Maresch (2009: 127).
 - 13 P. Tebt. III.2 1062 (207 or 190 BCE; Tebtunis, Arsinoite); for the earlier date, Clarysse and Vandorpe (1998: 34 n. 64).
 - 14 Rates as high as 1:15 are also attested; Clarysse and Vandorpe (1998: 34–5); Maresch (2009: 129–30 n. 26); cf. Wallace (1938: 57).
 - 15 This omits additional minor charges for collection, conversion, and the dike tax (*chomatikon*); cf. Milne (1925); Clarysse and Vandorpe (1988: 36); Maresch (2009: 129–30 n. 26, 132).
 - 16 During the second century CE, the *apomoira* became a fixed tax of 30 dr./ar. for vineyards and 15 for orchards, while the *eparourion* was a fixed tax of 6 dr. and 4 obols; cf. Wallace (1938: 55, 58); at an average 12 dr./art., the total wheat equivalent was about 3 art. of wheat/ar. for vineyards and 1.8 for orchards, which is likewise about double the tax burden on private grain-producing land in Roman Egypt; Drexhage (1991: 20).
 - 17 Maresch (2009); similarly, Préaux (1939: 185).
 - 18 Maresch (2009: 132) is rightly cautious in view of the small number of attestations.
 - 19 BGU XIV 2441, lines, 30, 39, 70, and 2449, line 43 (II or I cen. BCE; Herakleopolite); the same can be said of the vineyards available at the royal auction in P. Eleph. 14 (223/222 BCE; Apollonopolis?); cf. Maresch (2009: 127–8).
 - 20 See Chapter 4, p. 120, note 70.
 - 21 Maresch (2009: 124–6); Rostovtzeff (1910: 114–16).
 - 22 Hermann (1958: 99); Hennig (1967: 3).
 - 23 Briant (1996: 399–433, especially 427–33, 961–2); Van der Spek (1995: 195–7); Aperghis (2004: 87–9); Mileta (2008: 104); Herodotus 1.192, 3.89–95, 6.2 for Persian tribute (*phoros*); for Antigonos’ “tribute-assessed land” (*phorologoumenê gē*) in Asia Minor, RC 3 = Welles (1934: 15–32, cf. 174).

- 24 Ps.-Aristotle, *Oikonomika* 2.4.
- 25 Wilcken (1899: 185–8).
- 26 Rostovtzeff (1910: 18–29, 148–9; cf. 1941: 289–90).
- 27 Wilcken (1899: 194–215); Vandorpe (2000a; 2003).
- 28 Wilcken (1899: 194–215); Packman (1968); *contra* Grenfell and Hunt in P. Tebt. I, pp. 38–40.
- 29 Vandorpe (2000b; 2006); K. Baer (1962: 30 n. 43); Muhs (2005b: 1–9).
- 30 Vandorpe (2000b: 174); von Reden (2007: 88–90, 118–20) similarly separates “taxes” on private land from “rents” on royal land.
- 31 Vandorpe (2000b; 2006: 166–9).
- 32 P. Haun. inv. 407 (119/118 BCE; Edfu, Apollonopolite) = Christensen (2002), col. 13, lines 284–5: ἐκφόριον ἐκ τῆς ἕως τοῦ ις (ἔτους) ἐσταμένης ἐπιγραφῆς; cf. Vandorpe (2000a) for receipts for the *epigraphê* from the Apollonopolite nome.
- 33 Vandorpe (2000b: 198); cf. BGU XIV 2447 (II or I cen. BCE; Herakleopolite), lines 12–13, unfortunately quite fragmentary.
- 34 Sethe (1920: 176); Lichtheim (1957: 34–5); Felber (1997: 151–2).
- 35 P. Tebt. I 61(b) (118/117 BCE; Kerkeosiris, Arsinoite), lines 4–6 with editors’ note, p. 209; Cuvigny (1985: 66); Verhoogt (1998b: 140–2).
- 36 Keenan and Shelton (1976: 6).
- 37 Vandorpe (2000b: 185–91).
- 38 Keenan and Shelton (1976: 7–8).
- 39 Edict of Ti. Julius Alexander = Chalon (1964), §15, lines 55–9; edict of Hadrian = P. Giss. I 4 = W. Chr. 351 = Sel. Pap. II 354 (118 CE; Apollonopolite Heptakomias).
- 40 On salinity and soil quality in the Fayyum, see Chapter 2, pp. 49–54.
- 41 Rostovtzeff (1910: 47–57); cf. Wilcken (1912: 272–8); Heichelheim (1935: 866–7).
- 42 Shelton (1975); Shelton (1976); Keenan and Shelton (1976: 6–7).
- 43 Vandorpe (2000b: 185–91); cf. Kaplony-Heckel (1993; 1994; 1999; 2001).
- 44 P. Haun. inv. 407 = Christensen (2002) (119/118 BCE;

- Apollonopolite), *passim*; Vandorpe (2000b: 196); Christensen (2002: 157–8).
- ⁴⁵ Vandorpe (2006: 168).
- ⁴⁶ P. Lond. VII 2188 (148 BCE; Hermonthite); see the discussion in Chapter 4, pp. 133–5.
- ⁴⁷ Cf. Vandorpe (2000b: 198): *ekphoria* is “a term which is closely linked to the epigraphe.”
- ⁴⁸ Rostovtzeff (1906); Préaux (1939: 126–9); cf. Welles (1964: 13); Packman (1968: 62).
- ⁴⁹ Keenan and Shelton (1976: 9).
- ⁵⁰ Packman (1968: 62–3, tables 1–8, 22–4).
- ⁵¹ P. Cair. II 31073 (c. 240 BCE; Tanis, Arsinoite) = Monson (2007a), recto A, col. 2, lines 1–19.
- ⁵² Keenan and Shelton (1976: 5–6).
- ⁵³ P. Haun. inv. 407, col. 13, lines 281–5; Christensen (2002: 157–8).
- ⁵⁴ Listed in the order in which they appear in the cited works: $4^1/_{12}$, $4^2/_{3}$, $8^1/_{6}$ art./ar. in Kaplony-Heckel and Kramer (1985: 45–6); $4^6/_{7}$, 4, 4, $3^3/_{23}$ (?) art./ar. in Kaplony-Heckel (1993: 61 [O. BM EA 21481], 63 [O. Bodl Dem. 726], 65–6 [O. Louvre Dem. E8006], 66 [O. Louvre Dem. 8007], cf. 69 [O. Str asb. Dem. 1767] $1^{15}/_{17}$ with extra payment in wine and fowl, 70 [O. Str asb. Dem. 1947] $1^5/_{22}$ on temple land in release); $4^1/_{3}$, $4^5/_{6}$ art./ar. in Kaplony-Heckel (1991: texts 3 and 10); omitting surcharges, $6^1/_{4}$, 6, $4^1/_{4}$, 4, 5, $4^1/_{3}$, $7^1/_{2}$, $4^3/_{4}$, $4^5/_{6}$, $5^1/_{2}$, $4^1/_{4}$, $3^1/_{3}$, $3^1/_{2}$, 7, 4, $4^1/_{3}$ art./ar. in Kaplony-Heckel (1999: texts 1, 3–7, 10, 12–13, 15); 10 and 4 art./ar. in Kaplony-Heckel (2001: texts 18, 25; cf. Augustan texts 22–3 for similar rates); 16 (sic!), $9^1/_{2}$, 8, 1 (desert land), $4^1/_{6}$, 1, $1^1/_{12}$, 10, 6, 2 art./ar. in Kaplony-Heckel (2006: texts 26–30, 34, 39, 41; cf. Augustan texts 31–3, 35–6, 38, 40, 43–4 for similar rates); cf. Vandorpe (2000b: 196).
- ⁵⁵ For variations in the artaba measure, see most recently Pommerening (2005: 164–73).
- ⁵⁶ BGU XIV 2437 (II or I cent. BCE; Herakleopolite) with Brashear's comments, pp. 136–7.
- ⁵⁷ Rowlandson (1996: 247–52) on variation in yields deduced from private rents; Scheidel (2001: 224–31).

- 58 Some pharaonic Egyptian texts seem to imply yields as high as 20–40 art./ar. of emmer or barley grain; K. Baer (1962: 30); Vleeming (1993: 72–3); Eyre (2004: 170).
- 59 P. Eleph. Dem. 6 = P. Bürgsch. 14 (225 BCE; Edfu, Apollonopolite), lines 13–6; Sethe (1920: 342–4, 352–3); cf. Clarysse (2003: 20).
- 60 Editors' note to P. Tebt. I 5, line 59, pp. 38–9, cf. 430–1. P. Tebt. I 89 (113 BCE; Kerkeosiris, Arsinoite), 98 (c. 112 BCE; Arsinoite), and P. Tebt. IV 1149 (113/112 BCE; Kerkeosiris, Arsinoite) suggest that a fixed tax of approximately one artaba per aroura, termed *eisphora*, “contribution,” was also charged on some cleruchic and temple land.
- 61 This assertion, e.g. Husson and Valbelle (1992: 259), probably emanates from Préaux (1939: 131), who cites Heichelheim (1935: 867), whose more hesitant claim is not substantiated by the evidence he cites; cf. P. Tebt. I 5, line 15 with note.
- 62 P. Tebt. I 5, lines 10–16.
- 63 Keenan and Shelton (1976: 6–8).
- 64 Vandorpe (2006: 167).
- 65 Crawford (1971: 96–7); Keenan and Shelton (1976: 14); cf. P. Tebt. I 61(b) (118–117 BCE; Kerkeosiris), lines 323–4, and P. Tebt. I 98 (c. 112 BCE; Kerkeosiris), lines 27–8, 32.
- 66 Muhs (2005b: 1–3); Vandorpe (2006: 166–9).
- 67 Vandorpe (2006: 168–9). For the *syntaxis*: the Memphis decree (196 BCE), OGIS I 90 = SB V 8299 = Spiegelberg (1922), lines 14–16; P. Tebt. I 5, lines 50–6 (118 BCE); Otto (1905: 384–91); Préaux (1939: 49, 481); Thompson (1988: 78, 110); Salmenkivi (2002: 106–7); McGing (2004: 84–5); Muhs (2005b: 1–3, 9).
- 68 Vandorpe (2006: 168). Recent scholarship on the revolts rightly emphasizes the lack of unity within the Egyptian priesthood, with some temples siding with the king, but it would be wrong to ascribe the stimulus to the peasants' misery, since dissatisfied elites clearly took the initiative; Veïsse (2004a: 197–232).
- 69 E.g. O. Bodl. I 255 (II or I cen. BCE; Thebes?); Boswinkel and Pestman (1978: 115–19).

- ⁷⁰ Boswinkel and Pestman (1978: 115–19); it is doubtful that the lower-than-one-artaba rate of the *artabieia* implies that the remaining share was paid to the temples, since such variations of the *artabieia* are typical.
- ⁷¹ Boswinkel and Pestman (1978: 116).
- ⁷² OGIS I 90 = SB V 8299 = Spiegelberg (1922), lines 30–1.
- ⁷³ P. Tebt. I 5, lines 57–61.
- ⁷⁴ P. Tebt. I 5, lines 53–4, where the corrupt sentence perhaps refers to some temples receiving revenue directly and others via the state as a subvention payment (*syntaxis*) but one wonders whether the proportional tax on vineyards and orchards from the previous lines is meant here.
- ⁷⁵ Vandorpe (2000b).
- ⁷⁶ P. Tebt. I 6 (140/139 BCE; Tebtunis, Arsinoite).
- ⁷⁷ Cf. Vandorpe (2006: 168).
- ⁷⁸ P. Tebt. II 302 (71/72 CE; Tebtunis, Arsinoite); cf. Chapter 4, pp. 136–41.
- ⁷⁹ P. Cair. II 31079 (105 BCE), 30615 (98 BCE), 30626 (96 BCE) with Wegner (forthcoming).
- ⁸⁰ Keenan and Shelton (1976: 7–8, 11–14); Muhs (2005b: 9); Vandorpe (2006: 167).
- ⁸¹ Lesquier (1911: 48–52); Uebel (1968: 5, 26–7); Duttonhöfer (2002: 3–4); Van ’t Dack (1977); Fischer-Bovet (2008: 208–13).
- ⁸² There is just one attested infantryman with the status (*PP* II 2978); the rest were *katoikoi hippeis*.
- ⁸³ Lesquier (1911: 48–52) associates it with Greek ethnicity and may thus have assumed that Greek infantry also belonged to the *katoikia*; P. Moscow 123 = Malinine (1967) (70 BCE; Panopolis) provides an example of a prosperous Egyptian family of cavalry settlers (*rmt-ḥtr nb cq ḥn n³ gtwks*) in Upper Egypt.
- ⁸⁴ P. Tebt. I 32 (c. 145 BCE; Arsinoite) illustrates the promotion of one cleruch who is listed in the land registers (P. Tebt. I 62, lines 88–99, I 63, lines 74–83) with others who recently entered into the *katoikia*.
- ⁸⁵ P. Tebt. I 124 = C. Ord. Ptol. 54 (c. 118 BCE; Arsinoite), lines 8–14.

- ⁸⁶ BGU XIV 2437; similar perhaps is the reference to private land in P. Lips. II 124, line 85.
- ⁸⁷ See comments to P. Tebt. I 124, line 34, p. 515; Préaux (1939: 477 n. 1).
- ⁸⁸ P. Haun. inv. 407 = Christensen (2002) (119/118 BCE; Edfu, Apollonopolite).
- ⁸⁹ Christensen (2002: 64).
- ⁹⁰ P. Haun. inv. 407 = Christensen (2002), col. 13, lines 284–5.
- ⁹¹ BGU XIV 2437 (II or I cent. BCE; Herakleopolite) with Brashear's comments, pp. 136–7.
- ⁹² See comments to C. Ptol. Sklav. I 5 and II 244, pp. 206 and 977.
- ⁹³ Keenan and Shelton (1976: 11–12).
- ⁹⁴ For *katoikoi*, P. Tebt. I 75, lines 7–11; Keenan and Shelton (1976: 11).
- ⁹⁵ P. Tebt. I, pp. 38–9.
- ⁹⁶ P. Lips. II 124 (c. 137 BCE; Herakleopolite?).
- ⁹⁷ P. Lips. II 124, lines 1–11; cf. C. Ord. Ptol. 54, line 35, quoted above; for the *eisphora* as a fixed tax of $\frac{1}{2}$ or 1 artaba per aroura on cleruchic and temple land, see P. Tebt. I 89 (113 BCE; Kerkeosiris, Arsinoite), 98 (c. 112 BCE; Arsinoite) with editors' comments on p. 431, and P. Tebt. IV 1149 (113/112 BCE; Kerkeosiris, Arsinoite).
- ⁹⁸ P. Lips. II 124, lines 21–55.
- ⁹⁹ P. Lips. II 124, lines 64–94.
- ¹⁰⁰ Duttonhöfer (2002: 17–18, 39); cf. SB XVIII 13095 (c. 142/141 BCE; Arsinoite), where a cleruch is assessed only the harvest tax (*epigraphê*) in addition to the typical scribal fees and crown tax.
- ¹⁰¹ P. Tebt. I 99 = C. Ptol. Sklav. II 242 (c. 137 BCE; Arsinoite).
- ¹⁰² P. Tebt. I 99 = C. Ptol. Sklav. II 242, col. 2, lines 1–12; line 9 has been plausibly restored as εἰς τὴν [β (ἀρτάβην) καὶ τὰ ἐκφ]όρτια, after which Vandorpe (2000b: 198) suggests reading ἐκ τῆς περὶ κώ(μην) ἐπιγ[ρα(φῆς)], “the two-artaba tax and the rents from the *epigraphê* around the village,” but the papyrus rather supports the editors' reading, ἐκ τῆς περὶ κώ(μην) ἐπιβ[ολῆς] “rents from the (land) assignment around

the village”; for *epibolê*, cf. Wallace (1938: 20–1).

103 P. Tebt. I 99 = C. Ptol. Sklav. II 242, lines 20–25.

104 P. Tebt. I 99 = C. Ptol. Sklav. II 242, lines 45–60, where the taxes include the contribution (*eisphora*) in line 47 and the harvest tax (*epigraphê*) in lines 54 and 56 as well as an obscure tax pertaining to horses (*anippia*) and the crown tax (*stephanos*).

105 Alternatively, if the 64,792½ art. paid to Mesore was the annual amount for the previous year, it would represent 27% of the 243,577 art. on the assumption that the latter remained constant since 158/157 BCE. However, this higher figure may include late payments toward the arrears from previous years.

106 SB XVIII 13095 (c. 142/141 BCE; Arsinoite), lines 5 and 10.

107 If one counts back twenty-one years to 158/157, their arrears imply that they paid on average only 39,650 art. (71%) of the annual 55,840 art.

108 BGU VIII 1760 (51/50 BCE; Herakleopolite); cf. Ricketts (1980: 54–6).

109 BGU VIII 1760 (51/50 BCE; Herakleopolite), lines 19–25.

110 Editor's comments to BGU VIII 1760, pp. 37–8; Maehler (1983: 6–7); cf. Ricketts (1992: 276 n. 5).

111 BGU VIII 1760, lines 12–13.

112 P. Lips. II 124, lines 1–11.

113 P. Lips. II 124, lines 21–55 with the editor's comments, pp. 17–18, 28.

114 SB XVIII 13095 (c. 142/141 BCE; Arsinoite), lines 5 and 10; P. Tebt. I 99 = C. Ptol. Sklav. II 242 (c. 137 BCE; Arsinoite); cf. Vandorpe (2000b: 197): “the high amounts recorded in, for instance P.Tebt. I 99...show that the epigraphe or harvest tax becomes an important tax in the Fayum for grain land in the second half of the second century BC.”

115 P. Tebt. I 124 = C. Ord. Ptol. 54, line 35, quoted above.

116 C. Ord. Ptol. 75–6 (41 BCE; Herakleopolite); Bingen (2007 [1995]: 141–50).

117 C. Ord. Ptol. 75–6, lines 19–20.

118 C. Ord. Ptol. 75–6, lines 26–30; translations are modifications of Bingen (2007 [1995]: 143–4).

- 119 BGU XIV 2441 (II or I cen. BCE; Herakleopolite), lines 124 and 133; BGU XIV 2446 (II or I cen. BCE; Herakleopolite), line 56 with note; BGU XVI 2559 (after 9 CE; Herakleopolite), line 8; cf. P. Oxy. Hels. 9 (26 CE; Oxyrhynchite), line 12; for discussion of the abbreviation, see notes on P. Oxy. XLII 3047, line 11, p. 121, and P. Diog. 17, lines 12–13, pp. 131–2.
- 120 Rostovtzeff (1910: 91 n. 1, 92 n. 2, 114–16); Bowman and Rathbone (1992: 112).
- 121 Tomsin (1964); Lewis (1970a: 8–9); Rathbone (1993: 84–5).
- 122 P. Lond. II 192 (14–37 CE; Bakchias?, Arsinoite); Whitehorne (1992: 425).
- 123 P. Lond. II 192, lines 83–4.
- 124 Vandoorpe (2000b: 182–91); Kaplony-Heckel (2001: texts 22–3) attest tax rates of $5\frac{1}{4}$ (?) art./ar. of wheat and 6 art./ar. of castor seed respectively; Kaplony-Heckel (2006: texts 31–3, 35–6, 38, 40, 43–4) shows the rates 6, $1\frac{11}{15}$, 1, $1\frac{3}{4}$, $1\frac{3}{4}$, and 3 art./ar. of wheat; O. Medin. Habu Dem 121–5 (c. 9–1 BCE; Thebes, Diospolite): in 121 (9 BCE) the implied rate is $5\frac{47}{69}$ art./ar. of wheat, while in 125 (1 BCE?) a leaseholder pays the tax for the landowner at the explicit rate of $\frac{1}{2}$ art./ar.
- 125 Wilcken (1899: 194–9); Heilporn (2009: 150–1, 157–61); compare, for example, O. Wilck. 295, 703, 709, 712, 722, 733, 735–7, 1253–4, 1355–6, 1619, 1621–2 (Ptolemaic) with O. Wilck. 760–1008 (Roman); O. Theb. 15 (47 BCE; Thebes, Diospolite) appears to be one of the last datable receipts for the payment of the *epigraphê*.
- 126 O. Medin. Habu Dem 85 (60 CE; Thebes, Diospolite).
- 127 P. Lond. III 604 A (47 CE; Krokodilopolis, Panopolite?).
- 128 Not to be confused with the Krokodilopolis of the Pathyrite or the Arsinoite nome; Wilcken (1908: 534–8); Plaumann (1910: 87–8, 96); Abd-el-Ghani (2001: 27–8); Ptolemaeus, *Geographia* 4.5.65–6; see Chapter 3, pp. 96–9.
- 129 P. Lond. III 604 A, lines 1–8.
- 130 See Chapter 4, pp. 136–41.
- 131 Chalon (1964); English translation, Levick (1985: 175–81).

- 132 Chalon (1964), §7, lines 26–9.
- 133 Chalon (1964: 144–8); Jördens (2009: 271–80).
- 134 *Contra* Rostovtzeff (1910: 98–9, 109–14), who argued that the exemptions in question were only for unproductive land (*hypologos*); cf. Chalon (1964: 146–8) for criticism of Rostovtzeff's interpretation.
- 135 Chalon (1964), §8, lines 29–32.
- 136 Chalon (1964), §8, lines 31–2.
- 137 Full ownership in Roman law was theoretically restricted to citizens' private estates in Italy, while their territory belonged to the senate and Roman people, but this text, like so many others, illustrates that the Romans recognized provincial property rights; Chiusi (2005: 60–1, 65–9).
- 138 Rostovtzeff (1910: 114–16); comments to W. Chr. 374, p. 438; Jördens (2009: 275–6 n. 44, 488–9) attributes this fiscal reform to the emperor Augustus; cf. P. Eleph. 14 (223/222 BCE, Apollonopolis?) = W. Chr. 340 = Sel. Pap. II 233; see Chapter 4, pp. 117–19, for a discussion of the ownership rights.
- 139 See P. Petaus 43–4, pp. 184–5, and the discussion of the Roman land categories in Chapter 3, pp. 93–106.
- 140 Chang (2010: 73–87, esp. 79, table 7, 91–3); thus the enigmatic category of land “bought into the *katoikia*” is perhaps to be understood as land transferred for a price from the category owing rents to the category owing the one-artaba tax; Chang (2010: 80 n. 40); cf. Rowlandson (1996: 46–7).
- 141 SB I 4325 (early III cen. CE; Arsinoite); SB XVI 12493 (early III cen. CE; Euhemeria, Arsinoite).
- 142 See Chapter 3, pp. 96–106; cf. Rostovtzeff (1910: 90–2, 114–16); Wallace (1938: 11–19).
- 143 Jördens (2009: 103–6).
- 144 Chalon (1964: 222–9), §15, lines 55–9; Jördens (2009: 278–9).
- 145 P. Giss. I 4 (118 CE; Apollonopolite Heptakomias) = W. Chr. 351 = Sel. Pap. II 354; Jördens (2009: 473–7); cf. Keenan and Shelton (1976: 7–8) for Ptolemaic land-value assessment (*ek tês axias*).
- 146 Jördens (2009: 111–20).

- 147 Bowman (1985: 149).
- 148 See the discussion above: P. Tebt. III.2 1062 (207 or 190 BCE; Tebtunis, Arsinoite); cf. Clarysse and Vandorpe (1998: 34–5).
- 149 See comments to P. Ryl. II 192(b), pp. 243–9, esp. 245, table 1, and 247–8; Wallace (1938: 55, 58, 374 n. 4, 378–9 n. 54); Ruffing (1999: 340–2, 344–5).
- 150 Cf. Wallace (1938: 57); Clarysse and Vandorpe (1998: 34–5); Maresch (2009: 129–30 n. 26).
- 151 So Drexhage (1991: 20) reckoning with an average 12 drachmas per artaba of wheat; for other minor taxes on vineyards, see Ruffing (1999: 336–50).
- 152 Wilson (2002).
- 153 North (1981: 163).
- 154 Oleson (1984: 131–40).
- 155 Bonneau (1979: 62–3; 1993a: 107; 1994: 24–5); Jördens (2009: 429–30).
- 156 Banaji (2001: 151–2, 157, 214); Wilson (2002: 9).
- 157 Rathbone (2007a).
- 158 Wilson (2002: 9).
- 159 K. Baer (1962: 25–30); for example, in a papyrus of the 18th Dynasty, dated c. 1350 BCE, three arouras are sold for a cow allegedly worth $\frac{1}{2}$ silver deben: P. Berlin 9785 = Gardiner (1906: 28–35, 45), lines 14–19; prices of $\frac{1}{6}$ and $\frac{1}{10}$ silver deben for ten sacks (h^3r) of emmer grain (about 80 liters each) are recorded from the same and the next dynasty, implying a land price of twenty or thirty-five artabas per aroura, which is quite high relative to the later prices.
- 160 Using the mean prices to calculate implies an average of 12.3 art./ar. in pharaonic Egypt compared to 5.7 art./ar. in the Ptolemaic period.
- 161 K. Baer (1962: 43–5 n. 113).
- 162 Menu (1997).
- 163 In the Wilbour Papyrus of c. 1147 BCE, rates of 5, $7\frac{1}{2}$, and 10 artabas of emmer or barley grain per aroura are attested for the harvest tax on what was probably private land: Gardiner (1948: 62, 65).
- 164 Cadell (1994: 300–5); Maresch (1996: 204–5).
- 165 Drexhage (1991: 127–35).

- 166 Maresch (1996: 23–7, 204–5).
- 167 Maresch (1996: 196–8).
- 168 Bagnall (1999: 202–3).
- 169 Cf. Duncan-Jones (1974: 48–54); De Neeve (1985: 78–92, especially 82–3).
- 170 Felber (1997: 152–4) lists leases with annual rates of 2, $1^{9/11}$, $1^{5/7}$, $3^{3/4}$, 3, and 4 artabas of wheat, with typically higher rates such as 12(?), $5^{1/2}$, $5^{5/9}$ when the landowner paid the harvest tax.
- 171 In one example, a Greek cavalry settler leased 7½ arouras simply by agreeing to pay the owner's harvest taxes; P. Tor. Botti 30 = Felber (1997: 26–9). Such instances where the tenant was the stronger party, or at least the landowner's equal, were common in Ptolemaic leases; cf. Felber (1997: 99–115).
- 172 Maresch (1996: 85–7); for general criticisms of Maresch's reconstruction of Ptolemaic monetary history, cf. Cadell and Le Rider (1997: 70–3) and Bagnall (1999: 200–1).
- 173 Maresch (1996: 85) claims that the Roman price of land was 200–800 dr., but 800 is the maximum while 200 is a middling price; the actual range is 36–800 dr., the median 295 dr., and the mean 316 dr. Similarly, he regards the Roman wheat price as 5–10 art./ar. despite the fact that the median and mean in 30 BCE–200 CE are 8.8 and 9.8 art. For the period contemporary with land prices, 40–200 CE, they are 10 and 11.2 art.: Drexhage (1991: 11–24, 127–35).
- 174 Maresch (1996: 85–6); according to the calculations for Figures 5.1 and 5.2 above, it would be more accurate to state that the median Ptolemaic price should be 35,400 dr./ar., if it were to correspond to the Roman price.
- 175 Maresch (1996: 86).
- 176 Clarysse (1979a).
- 177 Clarysse (1979a: 733–5).
- 178 Felber (1997: 99–115, 142–50).
- 179 Rowlandson (1996: 202–79, especially 273–4, 276–7).
- 180 P. Herm. Landl. (after 346/347 CE; Hermopolite); Bowman (1985); Bagnall (1992: 128–32); Rowlandson (1996: 118–24).
- 181 Bowman and Rathbone (1992: 120–5); for the

- introduction of liturgies, see [Chapter 6](#), pp. 236--45.
- ¹⁸² Bagnall (1992: 130–9); Rowlandson (1996: 103–18); Tacoma (2006: 88–111).
- ¹⁸³ Bagnall and Frier (1994: 53–6) reckon with 1.75 million urban inhabitants, including Alexandria, or about 35% of the total population; Tacoma (2006: 39–55) summarizes the estimates for individual metropolitan sizes.
- ¹⁸⁴ Van Minnen (1986; 1987); Alston and Alston (1997: 205–7); Bagnall (1993: 78–92; 2005: 195, 199); Ruffing (2008: I 279–361, especially 358–61).
- ¹⁸⁵ Bowman (2000); Bagnall (2005); Rathbone (1989; 2007b).
- ¹⁸⁶ Smith (1976 [1776]: 830; V.ii.c.7).
- ¹⁸⁷ Smith (1976 [1776]: 833; V.ii.c.18).
- ¹⁸⁸ Smith (1976 [1776]: 828–40; V.ii.c-d).
- ¹⁸⁹ Smith (1976 [1776]: 904–5; V.ii.k.77–8).
- ¹⁹⁰ Vauban (1933 [1707]: 28–9).
- ¹⁹¹ Mathias and O'Brien (1976); Hoffman (1994; 1996); Hoffman and Norberg (1994).
- ¹⁹² Beik (1985); Hoffman (1994).
- ¹⁹³ Beik (1984; 1985: 245–78).
- ¹⁹⁴ See [Chapter 6](#), pp. 227--36.
- ¹⁹⁵ Le Roy Ladurie (1966); North and Thomas (1973); Postan (1973).
- ¹⁹⁶ Brenner (1976); Aston and Philpin (1985).
- ¹⁹⁷ Hoffman (1986: 43–9).
- ¹⁹⁸ Overton (1996: 7–9, 203–7); Patriquin (2004: 210–11).
- ¹⁹⁹ Brown (1988: 378).
- ²⁰⁰ Brown (1987); Iwahashi (2004: 99–100).
- ²⁰¹ Iwahashi (2004: 100–1); Brown (1993: 147–67).
- ²⁰² Brown (1993: 183–7).
- ²⁰³ Smith (1958; 1959); Hanley and Yamamura (1971); Yamamura (1973).
- ²⁰⁴ Iwahashi (2004: 99); Miyamoto (2004); Brown (1988).
- ²⁰⁵ Brown (1988: 388–9).
- ²⁰⁶ Smith (1958); cf. Roberts (1993: 79–84) who argues that special levies more than offset the apparent decrease in land taxation in the Tosa domain during the eighteenth century, though he admits that other regions may have differed.

- ²⁰⁷ Miyamoto (2004).
- ²⁰⁸ Miyamoto (2004: 36–45); Roberts (1993: 56–79).
- ²⁰⁹ Hanley and Yamamura (1977: 45): “It does seem too much of a coincidence that the first national survey took place precisely in the decade at which Japanese scholars hypothesize the fairly rapid population growth abruptly ended.”
- ²¹⁰ Miyamoto (2004: 45–55).
- ²¹¹ P. Haun. inv. 407 = Christensen (2002) (119/118 BCE; Edfu, Apollonopolite).
- ²¹² Wilcken (1899: 194–215); Vandorpe (2000b).
- ²¹³ Cf. Blouin (forthcoming).

Chapter 6 Administration and redistribution

Introduction

The realm of government seems to be one area where Roman rule left a major impact on Egyptian society. Administrative functions that had been carried out in the Ptolemaic period by tax farmers or royal officials who served voluntarily were placed upon local communities and assigned to individuals according to wealth assessments as compulsory public services. The impetus is often attributed to Augustan and Tiberian reforms, but the actual transition was clearly a gradual process.¹ The Egyptian temple administration underwent no less fundamental changes, starting immediately in the reign of Augustus. Temple estates lost much of the economic power that they had possessed for millennia in pharaonic Egypt. As their revenue was subject to increased scrutiny, priestly offices became less lucrative, especially relative to the new opportunities that the Roman agrarian economy and its metropolitan society had to offer.

The transition from Ptolemaic to Roman Egypt generally marked a transformation in the sources of wealth and status for elites. During the Ptolemaic period, Greek and Egyptian elites derived their power from the tenure of royal and priestly offices. Military rank and royal patronage led to land grants and gift estates. Administrative posts often provided salaries, land, or at least the authority to command resources from others. The Egyptian priesthood obtained shares of temple revenue as well as land and fiscal privileges. The state and temples redistributed so much of the agricultural surplus during the Ptolemaic period that the gains from being on the receiving end were high. Through their position in the hierarchy royal officials and priests gained access to valuable assets that ultimately had to be

directly or indirectly appropriated from primary economic producers. In Roman Egypt, by contrast, an increasingly urban elite obtained its power from investment in and improvement of private land along with the profits of market exchange. The opportunities for enrichment in Egypt through the state and temple redistribution were fewer and less lucrative under Roman rule.

The power traditionally attached to state and temple offices in Egypt and its decline under Roman rule requires an explanation. For Rostovtzeff, the change was set in motion already under the Ptolemies. He argued that they inherited an Egyptian feudal system, where state and temple offices were like fiefdoms, and transformed it into a rational and efficient bureaucracy with top-down oversight and market principles.² At least outside of the temple domain, the Ptolemaic administration was a voluntary and professional bureaucracy paid in money, which oversaw private tax farmers, who provided fixed revenues for taxes and royal monopolies in anticipation of a surplus. A revisionist view has emerged from the work of Bingen and Samuel. While acknowledging that it was voluntary and remunerative, they characterized the Ptolemaic bureaucracy as an inefficient and corrupt organization. It allowed officials and tax farmers to capture a large share of economic production before it ever reached the king, without contributing to Egypt's productivity.³ Such depictions of chronic dysfunction and exploitation on the part of the Ptolemaic bureaucracy may be too negative. To what extent officials were able to abuse their position for personal gain depended on the stability of the state and the ability of rulers to monitor their agents, which varied in Ptolemaic history.

Bingen attributes officials' "parasitic" behavior to structural tensions in Ptolemaic society: Greeks remained outsiders to the Egyptian agrarian economy, where status-based hierarchies in the land-tenure system prevented them from acquiring ownership of the land and investing in agriculture for profit.⁴ It was also linked to the putative segmentation of Greeks and Egyptians in Ptolemaic society.⁵

The behavior that Bingen describes is what social scientists call rent-seeking. A basic definition of rent-seeking is the attempt to gain an economic advantage by manipulating the economic environment.⁶ It is usually seen in opposition to profit-seeking in the market. As [Chapter 4](#) has shown, Bingen and others underestimated the security of land tenure and the openness of land markets in Ptolemaic Egypt. Moreover, it was not only Greeks but also Egyptians who participated in tax farming for the state and held offices as officials or priests.

The important point for this chapter is that service to the state throughout the Ptolemaic period was, as far as we can judge, always voluntary and remunerative. This feature is in stark contrast to the system of compulsory public services that developed in Roman Egypt. The limits on temple revenue and the extension of low fixed taxes on private land go some way towards explaining why elites wanted to move from the redistributive to the productive side of the agrarian economy. Those who remained in state and temple service faced much harsher scrutiny, especially those involved in tax collection. A top-down imperial policy driving the switch from voluntary to compulsory public services does not accord well with the evidence, which is more consistent with a series of gradual, reactive, and even reluctant reforms. Most noticeably in the realm of tax collection, the Roman provincial administration grappled with a shortage of volunteers who would willingly undertake services in the expectation of profit. The same may have been true for other officials, as the state expected them to bear more of the costs and devised institutions to facilitate nomination and compliance.

The transition from office holding to private land ownership as the primary source of wealth and status produced even broader social changes. The creation of a new stratum of Greco-Egyptian metropolitan elites in the countryside arguably weakened traditional social hierarchies and religious institutions. Nothing illustrates this better than the fate of Egyptian temples under Roman rule. In the Ptolemaic period, the priesthood largely constituted the

Egyptian elite in the countryside alongside the newly settled soldiers and royal officials. By the second century BCE, these privileged groups merged to some extent, making it harder to distinguish them, as cleruchs acquired priesthoods or made donations to temples and powerful priests cooperated with the Ptolemaic state in official and military roles.⁷ New restrictions on priestly status and temple revenue in the Roman period precipitated a change in elite behavior and identity, making landownership and Greek urban culture more attractive for many Egyptian priestly families.⁸

Egyptian temples and priestly offices

The revenue and privileges attached to the Egyptian priesthood reflect its importance for governing the country and legitimating the royal house. The temple domains in Egypt exhibited institutional similarities with the Egyptian state itself, especially in their fiscal domains and judicial functions.⁹ Chapter 4 already showed the direct involvement of temple personnel in leasing out and cultivating temple land. During the Ptolemaic period, the rents from the cultivators and craftsmen of temple estates ensured that priestly offices were a source of power for their occupants just as the rents from royal land maintained royal officials, soldiers, and other dependants of the king. That is not to say that there was a sharp distinction between the royal and temple domains. On the contrary, Egyptian temples facilitated Ptolemaic taxation and administration and arguably became more integrated with the ruling elite from the late third century BCE onwards.¹⁰

The Egyptian temples were literally houses for the gods and were endowed with landed estates with priestly “servants,” who performed the daily rituals and furnished offerings to maintain the gods’ comfort and ceremonial role. Some priests also worked as administrators or scribes of the temple. The high priest (*archiereus*) of the temple was responsible for the temple's finances in the Ptolemaic period. He was usually called by his Egyptian title (*mr-šn*), which

was rendered in Greek as *lesonis*.¹¹ Scribal offices were linked to temple revenue and constituted hereditary sources of power for scribal families.¹² There was a complex hierarchy of status within the priesthood, but a general term was used to distinguish priests (Greek *hiereis*, Egyptian *wc b.w*), who were “purified,” as the Egyptian word implies, from non-priests, including lower-ranking religious functionaries associated with the temple.¹³ Among the priests, prophets (Greek *prophetai*, Egyptian *hm-ntr.w*) seem to have had the highest rank. In the famous Ptolemaic trilingual decrees, in which priests from all of Egypt collectively voted to thank the rulers for their benefactions, they are evidently named in order of importance: first the high priests, then prophets, then several other grades of priest.¹⁴

The priests were divided into four, later five, tribes (Greek *phylai*) or watches (Egyptian *s³.w*), which rotated on duty in the temple for one-month periods. Each tribe had its own president (Greek *phylarchos*, Egyptian *c-n-s³*). The Canopus decree of 238 BCE added the fifth tribe in honor of Ptolemy III and Berenike, an organization that lasted until the late Roman period.¹⁵ An earlier Ptolemaic innovation was the creation of councilor priests (Greek *bouleutai hiereis*, Egyptian *wc b.w ntⁱ mnq md*) in each temple elected from each tribe, which would administer the temple together with the high priest.¹⁶ The priesthood was in principle hereditary, but enrollment in a tribe depended in the Ptolemaic period on acceptance by the temple's council.¹⁷ During the Roman period, when the state had usurped control over the admission of priests, an exception could be made for someone not born of priestly status if he possessed a special skill (for example, reading hieratic script).¹⁸ Presumably Ptolemaic temple councils made similar exceptions when they needed new priests. A list of priesthoods with their price on the back of a Ptolemaic legal manual suggests that priests paid a fee to the state upon taking up a priestly office.¹⁹

Both the office of prophet and temple service as a priest within a tribe entitled one to revenue from the temple's

income. The clearest description of the redistribution of temple revenue among prophets and tribes of priests is from an earlier period, from the petition of Petiese written under Persian rule around 513 BCE. Petiese III reports his family's long and violent dispute with the priests of Amun in Teudjoi (el-Hibeh) over the rights to the office of prophet, which his great-great-grandfather Petiese I obtained for restoring the temple. According to a passage narrating events of the 630s BCE, Petiese I as prophet of Amun assembled the priests to allot the temple's revenue, which was divided into a hundred shares. The priests received eighty shares, twenty for each of the four tribes, each of which had twenty priests. Petiese kept the remaining twenty shares, four for being the prophet of Amun and sixteen for being the prophet of the eight other gods of the ennead in Amun's temple.²⁰ Later in the narrative, during the reigns of Amasis and Darius I, are the first attestations of the *lesonis* as the administrator of the shares of revenue for the priests and prophets.

The principle that the tribes of priests and the prophets acquired shares of temple revenue certainly applied in the Ptolemaic period and even in the Roman period. Lists of priests from the Ptolemaic period may have been used to allocate shares of temple revenue (*ἡτ.ω*), just as in the petition of Petiese.²¹ Temple service on behalf of a tribe was even treated as a commodity that could be leased to other priests. A series of lease agreements for tribal temple service written on potsherds from Thebes illustrates the continuity of this practice from at least the second century BCE to the early third century CE.²² A papyrus from the Fayyum village of Tebtunis similarly shows the priests of the fifth tribe leasing their month of service in 94 BCE and receiving a sum of money in exchange for the revenue from the temple in kind.²³ The priests may have had special access to temple land, but the evidence is slim.²⁴

The office of prophet (*propheteia*) was an even more lucrative source of revenue, which the state monopolized and sold at auction to individuals. As early as the reign of Darius I, the Persian finance minister of Egypt was able to confer on an individual the office of prophet with its shares

of revenue in a temple.²⁵ In the early Ptolemaic period, a prophet in the temple of Horus at Edfu, who was in arrears for his payments to the temple as high priest (see below), furnished his property as security, including his shares of the temple (*dn̄.w n ḥw.t-nṯr*).²⁶ After his and his family's property was confiscated, the Ptolemaic officials announced an auction, where, in addition to vineyards and grain-producing land, bidders were sought for the office of prophet.²⁷ It was possible to hold multiple offices of prophet at once and to combine them with other priestly offices. Powerful families simultaneously held numerous titles, most famously the high priests of Ptah in Memphis.²⁸ An examination of the sources for priestly families in the major temples throughout Egypt shows that their prophetic offices were hereditary.²⁹

The income and responsibility attached to the office of prophet varied depending on the significance of the temple.³⁰ Menches, the village scribe of Kerkeosiris, drew up a “list of temples, prophets, service days, and revenues” around the village, which recorded who possessed days of service or shares in the village's temples as well as what sources of revenue those temples had.³¹ For example, it reports that one man and his brothers were prophets owning (*kratein*) $\frac{1}{5}$ of a small temple, to which accrued five artabas of wheat per year from the royal farmers, and about five arouras of temple land, after they had purchased the office from the state.³² Others inherited a $\frac{1}{5}$ share from their father, demonstrating that such shares could be hereditary.³³ Owning all of the temple shares would presumably make one the outright owner of the temple. A Ptolemaic law of the mid-second century BCE prohibited the sale of temples, but even afterwards shares of small sanctuaries were still conveyed with contracts of sale.³⁴ The fact that this was even a conceivable offence suggests that the “shares of the temple” were conceptually similar in both large and small sanctuaries. The private conveyance of temple shares is attested in Demotic contracts of sale such as one where a high-ranking priest and a woman sell their $\frac{1}{4}$ share of a minor sanctuary to a lower-ranking temple functionary.³⁵ Shares of temples in Ptolemaic Egypt

constituted hereditary and, in some cases, alienable rights to the redistributed surplus of their estates.

A Ptolemaic decree in 139 BCE sheds light on the sources of temple revenue and the profits of priestly offices.³⁶ The first part is fragmentary but shows that the joint rulers, Ptolemy VIII, Cleopatra II, and Cleopatra III, were responding to a letter from a specific temple, which raised several issues about its rights and privileges: the status of temple land and of land dedicated to the temple by cleruchs; the profits of priestly offices, specifically the offices of prophet and temple scribe, which had been bought for the temple; the dues paid to the temple by its associated craftsmen and professionals; revenue from the collection of precious objects and from sacred prostitution.³⁷ The priests complained “that certain persons who lease lands and other properties for a long period, and some who even take forcible possession without any contracts, fail to pay the rents (*phoroi*) due and do not contribute the full amount of the profits of the honorable offices or posts as prophet or scribe, while others steal the sums paid and collected.”³⁸ The Ptolemies’ response was to confirm the temple’s revenues and to prohibit others from hindering the priests’ agents in collecting them. The document illustrates that temples in principle derived rents from temple land as well as dues from other temple industries or activities. What is interesting for the purpose of this chapter is that such revenue was linked explicitly to the financial benefits assigned to priests, prophets, and temple scribes.

In addition to performing religious service and acquiring temple shares, one could profit from temple estates during the Ptolemaic period by serving in an administrative capacity. Here it is fitting to describe the role of the so-called *lesonis* or high priest. Typically a prominent member of the priesthood, he is widely attested during the Ptolemaic period as the manager of the temple’s estate and as the official responsible for its finances.³⁹ Letters between the Persian satrap in Memphis and the Egyptian priesthood in Elephantine in 492 BCE suggest that, at least in the early

Achaemenid period, the priests annually selected a candidate for high priest, whom the satrap had to approve.⁴⁰ A priest of Thoth in Hermopolis, Petosiris, proudly reports in his tomb autobiography that he held the office of *lesonis* for seven consecutive years and restored the economic productivity of the temple estate at the end of the Persian period and later earned rich benefactions under Alexander or Ptolemy I.⁴¹

There were incentives for becoming the high priest and increasing the productivity of the temple estate. A Ptolemaic letter from a prospective high priest to the top official of the Thebaid promises him payment if he helps to get him nominated for the office.⁴² Particularly illuminating for his status is the instance from Edfu mentioned above where arable land, vineyards, and the office of prophet were put up for auction after being confiscated from the high priest, apparently after he failed to meet his financial obligations to the temple and the state.⁴³ The high priest required sureties who could guarantee the payment. As Clarysse has observed, such liability and the use of third-party sureties for financial obligations recalls the Ptolemaic system of farming out taxes and royal monopolies.⁴⁴

A recently discovered papyrus datable to 180/179 BCE confirms Clarysse's hypothesis that the high priest was a tax farmer and underscores his economic power.⁴⁵ A prominent priest applies to the councilor priests of the temple of Harsaphes in Herakleopolis, requesting nomination as the high priest for one year. Though fragmentary, his offer seems to suggest that he would obtain the rights to all of the temple's income in exchange for fixed payments reckoned largely in money. He would also take responsibility for making all of the necessary payments to the agent of the overseer of the temples (Greek *epistatês tôn hierôn*, Egyptian *rmꜥ ntꜥ šn r ḥw.t-nṯr*). In the Ptolemaic period, this overseer was a state-appointed official who inspected the temples' finances.⁴⁶ Thus the high priest voluntarily undertook to secure the stream of revenue flowing from the producers on the temple estate to the priesthood and the royal administration.

In view of the tremendous risks, as illustrated in the earlier Edfu case, the high priest undoubtedly expected that he could profit under normal circumstances. After six years out of office, in 225 BCE the former high priest of the temple of Horos in Edfu was still in arrears to the priesthood for the temple's wheat revenue, namely, 963 deben or 19,260 drachmas according to one reading.⁴⁷ At that time one artaba of wheat, $\frac{1}{10}$ of an adult male's annual consumption, cost around two drachmas.⁴⁸ Similarly, the account of the prospective high priest's payments to the priesthood in Herakleopolis in 180/179 BCE contains entries as large as 74,411 deben or 1,488,220 drachmas, when one artaba of wheat cost about 150 drachmas, corresponding to about 10,000 artabas of wheat.⁴⁹ These figures represent only a portion of the total revenue but still provide a glimpse into the remarkable economic influence of these two Ptolemaic temples, each located in a nome capital, for which the high priest bore financial responsibility.

The high priest's role as a tax farmer for temple revenue, who guaranteed a fixed amount in the hope of earning profit from the surplus, adds another dimension to Bingen's theory of structural tension in Ptolemaic society. It would indicate that the rent-seeking behavior of officials, that is, profiting from the Ptolemies' manipulation of the economic environment through taxes and monopolies, was not only a Greek initiative but also an Egyptian one practiced in the traditional domain of the Egyptian temples.⁵⁰ The assumption that tax farming was a Greek innovation that was introduced to Egypt under Ptolemaic rule may even be unwarranted.⁵¹ Babylonian temples had been administered by tax farmers for centuries, and during the Persian period they were chosen from among the priests as in Egypt.⁵² Therefore Egyptians were involved, just as Greeks, in the acquisition of surplus by acting as agents of the Ptolemaic state. Moreover, Egyptian elites sought priestly offices, analogous to royal positions, because they provided access to the redistribution of harvest taxes or rents and other revenue from temple estates.

Temple revenue under roman rule

The Ptolemies' generosity to the temples and the profits that accrued to priestly offices stand in contrast to the situation under Roman rule. Even the great priests of Ptah in Memphis seem to have fallen out of grace after the Roman conquest.⁵³ Bowman and Rathbone point to a series of building inscriptions from Dendera that illustrate a similar end to the dominance of a local priestly family at the beginning of the Roman period. Both father and son successively became governor of the Tentyrite nome and held an impressive array of scribal and prophetic offices. However, the next governor, first attested in 1 CE, evidently lacked these connections.⁵⁴ Despite such changes, the basic organization of the priests into tribes as well as the more nuanced ranks of the temple hierarchy and their remuneration from the income of the temple remained much the same under Roman rule. The full effect of Roman reforms may only have been realized in the long-term decline of Egyptian temples and the consequent religious changes.⁵⁵

The decree of the Augustan prefect Petronius (24–21 BCE) offered temples the choice of either paying rent to the state for their temple land or having it converted into public land in exchange for an annual stipend.⁵⁶ It was argued in [Chapter 4](#) that this “confiscation” was only aimed at the land that priesthoods directly cultivated or gave out on non-vendible leaseholds.⁵⁷ The Romans recognized and enhanced the private property rights that prevailed on other temple land, which could be freely bought and sold already in the Ptolemaic period. The Roman administration even extended the favorable fixed land taxes to private owners of temple land, who were often, but not exclusively, members of the temple community.⁵⁸ Hence individual priests who owned land apart from their temple offices would have partly benefited from these reforms. The temples' receipt of an annual stipend from the state may have compensated a little for the loss of revenue, but such dependency effectively limited the temples' traditional role in politics and administration.

The reorganization of temple land was one of several Roman measures aimed to curb the redistributive power of the temples and to subject them to more stringent oversight.⁵⁹ Still during the reign of Augustus, another prefect, Turranius, issued this edict in 4 BCE: “I order [the temples] to register their hereditary priests and acolytes, and all the others belonging to the temples and their children, and to make clear what function they perform. I will then scrutinize the list of the current 26th year of Caesar, and those not of priestly origin I will forthwith remove.”⁶⁰ The aim was probably to limit the number of priests who were exempt from the poll tax and compulsory services on the dikes.⁶¹ Nevertheless, the edict also illustrates the interference of the Roman state in the affairs of Egyptian temples. Whereas each temple's council decided on admission to the priesthood in the Ptolemaic period, during the Roman period a declaration of birth indicating priestly parentage was needed and, upon reaching maturity, a candidate for the priesthood had to submit to an inspection before a state official granting permission to be circumcised.⁶² Upon passing inspection he also had to pay an entrance fee according to the rank and type of revenue of the priestly office, just as in the Ptolemaic period.⁶³ The difference was that the priests now also paid an annual fee in order to maintain their privileged status.⁶⁴

The emperor's private account (*idios logos*) was a governmental agency that played a major role in the regulation and sale of priestly offices during the Roman period.⁶⁵ Around 120 CE, the office of high priest for all of Egypt was created and became responsible for the enforcement of such regulations on Egyptian temples alongside the manager of the private account.⁶⁶ An important papyrus contains a compilation of rules relating to the function of the private account as the recipient of special payments due to the emperor.⁶⁷ The compilation itself dates to the mid-second century CE, but the preamble proclaims that it was established by the emperor Augustus and that it also includes additions by later emperors, the senate, the prefects, or holders of the private-account office.⁶⁸ Despite its reorganization under Augustus, the office itself and some

of the regulations were derived from Ptolemaic and earlier Egyptian law.⁶⁹

Among the diverse stipulations included in these regulations, one passage asserts that priests were not allowed to own land or to exercise any profession other than that of priest.⁷⁰ If this rule was strictly enforced, then those who remained committed to the pursuit of priestly offices were deprived of economic opportunities such as landholding that came to define the provincial elite of Roman Egypt.⁷¹ Overall, the evidence for priests' activities from Roman Egypt does indeed mark a contrast with the Ptolemaic period, when Egyptian priests were active in virtually every aspect of economic, military, and political life. While the new law may partially explain their low profile, the priestly offices could conceivably have been sources of wealth and power, as they were in the Ptolemaic period. This, however, was not the case in the Roman period because other reforms undermined the temples' economic significance.

The prefect Tuscus (62/63–65/66 CE), under the emperor Nero, ordered an even more thorough investigation into the status of priests and temple finances, including a complete account of each temple's property. Irregularities such as illicit revenues were still being checked in the second century CE against the original declaration ordered by Tuscus stored in the public archive (*demosia bibliothekê*).⁷² Thus Whitehorne suggests that the revenues of the temples were effectively frozen at the time of Tuscus, so that any increase could potentially be confiscated.⁷³ The temples had to submit annual declarations of personnel and inventory (*graphai hiereôn kai cheirismou*), which are first attested in the early second century CE but probably go back to the edicts of Turranius and Tuscus.⁷⁴ Some of them also list the temple's income and expenditure for inspection.⁷⁵ In Soknopaiou Nesos, there were two annual officials attested from 24 to 135 CE called "royal administrators of the priests" (*sh.n.w pr-c3 n3 wcb.w*).⁷⁶ Their role was to receive temple taxes due to the state from the temple's *lesones*, discussed below, and from its weavers. Then they deposited the money

along with an account at the state bank in the nome capital and returned the “priests’ surplus” (ḥw³ n³ wcb.w) to the temple.⁷⁷

While state auctions of prophetic offices continued into the Roman period, their value as sources of wealth and prestige seems to have declined.⁷⁸ Examples are found from other regions of Egypt, but especially informative is a dossier from Tebtunis in the Arsinoite nome.⁷⁹ The office of prophet of Soknebtunis, the principal god of the village, had been vacant for many years and for sale for a long time when the bidding began in 126 CE at 100 drachmas and rose to 640 drachmas.⁸⁰ At that time an artaba of wheat cost about ten drachmas.⁸¹ The administrator of the private account in Alexandria, who was responsible for the auction, must have then offered additional privileges because another priest raised the bid to 2,200 drachmas and won the office in 146 CE.⁸² The declaration of his bid states that he would be entitled to a hereditary share of $\frac{1}{5}$ of the temple revenue, namely, 50 artabas of wheat, $9\frac{5}{6}$ artabas of lentils, and 60 drachmas, whose total monetary value at the time would have been about 660 drachmas or 66 artabas of wheat per year.⁸³ Landowners would need as little as ten arouras to earn the same amount in rent from private tenancy.⁸⁴ Related texts suggest that the prophet's tenure of his office was insecure.⁸⁵ One could, however, hold prophetic offices in multiple temples simultaneously. In this case, the person who made the winning bid and became the prophet of Soknebtunis simultaneously held the office of prophet in the temple in Akoris in the Nile Valley, which suggests that he was a man of substantial means and trans-regional connections.⁸⁶

The financial position of the temple of Soknebtunis itself in the village of Tebtunis seems strikingly weak. The prophet's $\frac{1}{5}$ share in 146 CE implies total temple revenue of about 3,300 drachmas or 330 artabas of wheat per year, which had to be shared among its fifty registered priests and other temple dependants. An account of the temple's revenues and expenditures in 107/108 CE has an entry for 259 artabas,

apparently the total wheat revenue, which is close to the 250 artabas of wheat implied in the prophet's $\frac{1}{5}$ share.⁸⁷ It also indicates that the head of each tribe of priests obtained a quarter artaba of wheat each day, while the lower-ranking functionaries got $\frac{1}{8}$ artaba per day, costing 137 artabas of wheat per year for feeding those on active duty with baked bread.⁸⁸

An annual revenue of 3,300 drachmas or 330 artabas of wheat in 146 CE was a small sum relative to what it must have earned in the Ptolemaic period. It was comparable to the income of a single landowner with only forty to fifty arouras of private land. During the Ptolemaic period, the same temple probably possessed hundreds of arouras of temple land. It held some 130 arouras in the nearby village of Kerkeosiris thanks to a donation from some soldiers, on which they paid only $\frac{1}{2}$ artaba of wheat per aroura in taxes to the state.⁸⁹ The priests already complained to the Roman prefect in 71/72 CE about an increase in their rent for the $500\frac{1}{4}$ arouras of temple land to a level equivalent to about 120 artabas of wheat.⁹⁰ That is over four artabas per aroura. The rate is not much less than the rent that tenants paid on private estates, so the priests' ability to keep control of this land hardly counts as a generous privilege. Big temples in the nome capitals had presumably higher revenue than village ones, but a relative decline in their revenue is just as likely and would have been especially conspicuous as landowning elites living in the metropolis grew wealthier, eclipsing the status of priests.⁹¹

Against the backdrop of stringent oversight and shrinking endowments for Egyptian temples under Roman rule, the office of high priest or *lesonis* deserves further consideration. During the Ptolemaic period, there was one high priest of each temple, who acted as a tax farmer to secure its revenues for potentially large profits or losses. Just as they did in other areas of fiscal administration, the Romans removed such finances from large-scale tax farmers and placed the burden on communities, in this case on each priesthood as a whole.⁹² The best evidence for the transition is Soknopaiou Nesos, where there was a single powerful high

priest in the Ptolemaic period, but starting in the reign of Augustus a new kind of *lesonis* is attested. His title was no longer translated as high priest (*archiereus*) in Greek sources and can no longer be understood in that sense. From 12 BCE until 161–163 CE, there were as many as seventeen *lesones* of the Soknopaïos temple in a single year without counting those of minor sanctuaries attached to that temple.⁹³

These multiple *lesones* acted as a consortium that served as a financial intermediary, collecting specific temple taxes for the priests and making payments on their behalf to the state officials.⁹⁴ They sometimes made one-year leases for the temple's dependent sanctuaries in a manner that resembles their Ptolemaic role as tax farmers of the whole temple's income, but there is not yet any evidence to show whether their economic relationship to the temple was a tax farming agreement.⁹⁵ Even if this were so, the consortium of *lesones* served the priesthood in a more limited role, collecting specific internal revenues. The new texts from Soknopaïou Nesos show that the *lesones* paid a *lesonis*-tax, analogous to the professional tax on weavers, at irregular intervals throughout the year to the temple before the latter paid it to the state.⁹⁶

Other texts suggest that the *lesones* of the Roman period were still members of the priesthood. Receipts from the temple of Soknopaïos were issued by “the lord of purity and overseer of the lake of the Great Green of Nephersatis [a local priestly title], the priests (*wcb.w*), the prophets (*ḥm-nṯr.w*), and the *lesones* (*mr-šn.w*) of Soknopaïos...the five tribes altogether.”⁹⁷ This formula implies that the *lesones* belonged to priestly tribes. Similarly, a report of an inspection of three men states that they belonged to “the paternal rank of prophet and *lesonis*.”⁹⁸ One report about the auction of priestly offices in Tebtunis refers to the combined office “of prophet and *lesonis* or palm bearer.”⁹⁹ The latter seems to have been a remunerative priestly and ritual function rather than a tax-farming assignment.¹⁰⁰ Its equation with the title of palm bearer as well as its combination with the office of prophet are obscure but seem to contrast with Ptolemaic practice. An entry in the account

of the temple at Soknopaiou Nesos connects the offices of prophet and *lesonis* with “god bearer” (*theageia*) and suggests that there was an annual fee to be paid to the state for these offices.¹⁰¹ However, “god-bearer” is thought to be a low-ranking temple status, so the combination of these titles remains a puzzle.¹⁰²

Unfortunately, there are few comparable references to the office of *lesonis* in the Roman period.¹⁰³ In Demotic literature, the title was still remembered as the designation for the single powerful temple administrator, even after Roman reforms had rendered it anachronistic in this sense.¹⁰⁴ Finally, it should be remembered that the title *lesonis* was used for the head of private religious and professional associations in Ptolemaic and Roman Egypt.¹⁰⁵ The relationship between the *lesonis* in the temples and the one in private associations is unclear, but the imitation of temple titles for officeholders in associations is otherwise well attested. They should not be confused with the corresponding temple offices.¹⁰⁶

Once the *lesonis* vanished from his former role as tax farmer and manager of the temple estate, the financial obligations of the temple probably became the responsibility of the elders (*presbyteroi*). Already during the reign of Augustus, this consortium of annually selected priests was introduced, replacing the Ptolemaic councilor priests (*bouleutai hierais*), who performed similar functions.¹⁰⁷ Rostovtzeff argued that the change in their title and the annual rotation in office indicate that they were liturgical officials, analogous to village elders, chosen from among the wealthiest priests. Oertel regarded this view as plausible but cautioned that it would predate the earliest evidence for the introduction of compulsory services (see below).¹⁰⁸ The elders are repeatedly attested as managers of temple property and revenue, including leasing out temple land and dealing with state officials.¹⁰⁹ The priestly elders in Soknopaiou Nesos swore an oath to officials in a dispute over the temple's subvention (*syntaxis*) and its prophet's share of revenue from a dependant sanctuary.¹¹⁰ The strongest evidence for the elders' liability – in place of the

Ptolemaic *lesonis* – is that they swore the oath taking responsibility for the validity of the temples' annual declarations to the state of their priests and revenues. Usually they did so jointly, but there was always at least one elder to swear the oath.¹¹¹

Other temple officials may have also borne some responsibility. It is even conceivable, as noted above, that tax-farming arrangements were still used for securing some specific temple revenues. However, the evidence available suggests that the anticipated profits from managing temple finances played a minor role compared to the monitoring of temples by intrusive regulations and inspections. A second century CE letter written to someone at the temple of Soknebtunis in Tebtunis conveys some of the anxiety that priests had about the inspection of their finances:

You must know that an inspector of finance in the temple has arrived and intends to go to your division also. Do not be disturbed on this account, as I will get you off. So if you have time, write up your books and come to me; for he is a very stern fellow. If anything detains you, send the books on to me, and I will see you through, as he has become my friend. If you are in any difficulty about expense and at present have no funds, write to me, and I will get you off now as I did at first. I am making haste to write to you in order that you may not put in an appearance yourself; for I will make him let you through before he comes to you. He has instructions to send recalcitrants under guard to the high priest [of all Egypt].¹¹²

The recipient is most probably a temple scribe in Tebtunis since he is told to write up his books, while the writer is presumably an official in the nome capital. In Soknopaiou Nesos, the temple scribe served one year, was not allowed to hold another office during that time, and often represented the temple in administrative dealings.¹¹³ This too was a fundamental change from Ptolemaic Egypt, where scribal offices were often hereditary sources of temple revenue, and mirrors the new role of the priestly elders.¹¹⁴ Clement of

Alexandria, writing around the end of the second century CE, states that prophets were in charge of the temples' finances in Egypt.¹¹⁵ However, there is no documentary evidence that this normally hereditary office, which entailed the performance of rituals and the receipt of shares of temple revenue, carried such responsibility. More probably, this was borne by the temple elders and scribes, who seem to have become annually rotating officials in the Roman period.

The declining wealth and status attached to priestly offices are not simply to be explained by the hostility of the Romans towards Egyptian religion.¹¹⁶ Priestly offices continued to confer privileges such as exemption from the poll tax and, at least in principle, from compulsory services. Temple refurbishment and new construction continued into the third century CE.¹¹⁷ Temples also retained their traditional organization and certain revenues for redistribution among the priests. Many occupants of priestly offices were already the owners of temple land and other productive assets, so they stood to benefit from the Roman fiscal regime. As [Chapter 4](#) has shown, instead of confiscating everything, the Romans assimilated the temple land with other private land insofar as it was the holders' property rather than a temporary leasehold from the temple. What shifted were the sources of power, as the temples' historic role as redistributive organizations with state-like characteristics receded. Consequently, an overall economic decline of Egyptian temples in the Roman period is unmistakable.¹¹⁸ Egyptian elites stood to gain more from investing in land than from purchasing priestly offices or maintaining power in the temple hierarchy.

The ptolemaic royal bureaucracy

The contrast between Ptolemaic and Roman priestly offices finds its counterpart in the civil administration. As noted above, the last generation of scholars viewed the Ptolemaic bureaucracy and tax-farming system with suspicion, emphasizing the prevalence of corruption and exploitation.¹¹⁹ Samuel stressed the inefficiency caused by

intra-elite competition for state resources.¹²⁰ Bingen highlighted the tension created by a land-tenure system that inhibited investment and narrowed the possibilities for economic gain to the realm of state service.¹²¹ Examples of what economists would call rent-seeking behavior are common in the Ptolemaic sources but one should be cautious about making bold generalizations about the administrative system from these sources alone. The ability of the rulers to monitor their agents and prevent predation surely depended on the level of political instability, which increased markedly from the late third century BCE onward.

The Ptolemies rewarded high officials, soldiers, and friends of the king with grants of land. Yet, as Rowlandson has recently observed, they managed to prevent the emergence of a hereditary landed aristocracy and maintained central control over the countryside.¹²² Ptolemy II and III awarded large gift estates (*doreai*), normally of 10,000 arouras, to high-ranking officials and royal supporters. Apollonios, the finance minister (*dioiketês*) under Ptolemy II, was a recipient. The evidence, which comes mostly from the Fayyum, suggests that these grants were part of the massive reclamation effort in that region. Later in the Ptolemaic period, the so-called gift estates were typically fiscal domains, from which royal revenue (not land as such) was ceded to their beneficiaries. The recipients of both landed and fiscal gift estates could have been members of court, powerful generals, and collaborating local elites.¹²³ A separate system applied to the settlement of soldiers in the early Ptolemaic period, giving them cleruchic land as compensation for military service in accordance with their rank. During the second century BCE, access to cleruchic land was extended to the police.¹²⁴

The Ptolemies also developed the institutional capability to pay officials regular salaries in money and rations in kind as compensation for the fulfillment of their duties. Around 249/248 BCE, Theodoros, the royal engineer in charge of the Fayyum reclamation, complained to the deputy finance minister (*hypodioiketês*) that he had still not received his salary (*opsonion*) and grain allowance (*sitometria*). He

warned that his staff might abandon him if he could not pay them, causing work delays. Finally, he pointed out that his predecessor Kleon had received a “boss salary” (*hegemonika*) of 300 drachmas and proportionate grain in Alexandria as well as an additional 300 drachmas, 12½ artabas of wheat, and 25 artabas of barley for his staff in the Arsinoite nome. Kleon had written a similar letter to the deputy finance minister in 255/254 BCE, while he held the office.¹²⁵ Theodoros expected the same salary as his predecessor, presumably for a one-year period, which was a large sum in the mid-third century BCE.¹²⁶

Although the evidence is patchy, salaries like those of Kleon and Theodoros were probably typical of other royal officials as well. The royal scribe, who was in charge of the fiscal administration of each nome, received a salary (*opsonion*) to finance his operations, which continued to be the case in the Roman period.¹²⁷ Police and guards certainly received a salary, part of which was sometimes paid as a deduction from their poll-tax liability in the early Ptolemaic period. The chief of police for the Arsinoite nome, for example, received 300 drachmas per month, mid-level superintendents received 30 to 80 drachmas, which were substantial sums compared to the six drachmas that local guards earned.¹²⁸ Within the military chain of command, officers and active soldiers likewise obtained salaries and rations.¹²⁹ It has been suggested that the so-called overseer fee (*epistatikon*) and scribal fee (*grammatikon*) were taxes used to pay the officials with these titles, while part of the costs of paying for the annual land survey came from exacting local fees.¹³⁰ An official involved in tax collection on the staff of the finance minister is found being paid a grain ration in a document from the first century BCE.¹³¹ The notion that Ptolemaic officials were unpaid or chronically underpaid does not quite balance with the evidence.¹³²

The most important feature of the Ptolemaic administration is that royal officials at all levels served voluntarily. They actively sought and even paid for appointments and promotions by their superiors. In order to obtain the office of village scribe in Kerkeosiris, Menches

had to cultivate ten arouras of marginal land at high rent and to pay a substantial sum in kind – 100 artabas of wheat and 60 artabas of pulse – at least part of which another person mysteriously paid on his behalf.¹³³ The cultivation requirement was hardly advantageous to him, but his willingness to meet these obligations implies that Menches earnestly desired the office.¹³⁴ A passage in a royal decree of 118 BCE seems to suggest that the governor (*strategos*), the highest official of the nome, likewise paid for his appointment. The passage is damaged, but according to one interpretation the decree may have aimed to curb the excesses of such competition.¹³⁵

The prospect of a salary and rations must have motivated people to enter state service, but the prestige and power associated with royal offices may have been another important factor. Crawford explains their eagerness to acquire and pay for royal appointments by pointing to the widely attested practices of patronage and protection. It was evidently tolerated, even expected, that officials would use their authority for personal gain. One suspects that the protection (*skepê*) that tax farmers, tenants, and subordinates obtained from officials entailed bribery or reciprocal loyalty that benefited those with power.¹³⁶ Even if this cannot have been the normal or primary means by which royal officials were compensated, there are plenty of indications that they engaged in and profited from these activities.

Patronage may have entailed receiving payments or labor from people of lower status in one's protection. Even military officials sometimes played this role.¹³⁷ Crawford interprets pleas for help in petitions within the context of patronage relationships, which may account for the diversity of officials to whom they were addressed depending on whom the petitioner could count on for protection.¹³⁸ The relationship between Menches and the person who paid his fee for obtaining office was conceivably based on some sort of patronage.¹³⁹ Such behavior could easily violate the law and the king's interests. One passage of the royal amnesty of 118 BCE attempts to rein in such practices:

They have decreed that the governors (*strategoi*) and the other officials may not compel any of the inhabitants of the country to work for their private service, nor use their cattle for any purpose of their own, nor force them to feed calves and other animals for sacrifice, nor force them to provide geese or birds or wine or grain for a price or on the occasion of their renewals [of office?], nor oblige them to work without payment on any pretext whatsoever.¹⁴⁰

The challenge in attempting to control such activities was that higher officials often protected their subordinates from danger. Crawford cites a letter that colorfully illustrates this point. A lower official pushed the limits of his patron's patience by meddling in the affairs of the tax farmers although he was "merely in charge of a sub-department." His superior continues: "If you enjoy your drinking and being in a position of protection (*en skepêi*), you are not thinking of the future."¹⁴¹ It may have also been helpful for the temples to have powerful patrons to look out for their interests.¹⁴²

The ability of the central state to monitor its agents was probably most limited in periods of political instability, especially during the second century BCE.¹⁴³ One of the more elaborate schemes was the extortion racket of a village headman. For three years, with the help of several henchmen he exacted a surcharge of $\frac{1}{2}$ artaba of wheat and 90 drachmas per aroura on top of the king's regular harvest taxes. He had one of these helpers thrown into jail over a dispute about the wheat profits and forced him to cede to him his royal land. The latter then reported the whole matter in a letter to the finance minister.¹⁴⁴ The fact that higher officials were involved in similar crimes is obvious from several passages of the royal amnesty of 118 BCE, including this one, which is much like the one quoted in the previous paragraph:

No one is to collect anything whatsoever from the cultivators and the taxpayers and the persons connected with the revenues and the honey-workers

and the rest for the benefit of the governors (*strategoi*), police supervisors (*epistatai tôn phylakitôn*), police chiefs (*archiphylakitai*), tax controllers (*oikonomoi*), or their agents or the other officials. Neither governors nor holders of official positions nor their subordinates nor any other persons whatsoever shall take the richest royal land from the cultivators by fraud or cultivate it as they choose.¹⁴⁵

Likewise, an official letter preserved in Menches' archive accuses a number of officials in the Arsinoite nome of abusing their authority, specifically by embezzling tax revenue and illicitly holding multiple royal offices simultaneously. "The majority of them have been appointed without the cognizance of the finance minister and some have wormed themselves into positions of tax controller, district chief, granary official, village headman, and other offices inconsistent with their own work, others have transferred their duties to their sons who are quite young men and sometimes to other persons altogether..."¹⁴⁶ These accusations underscore the fact that royal offices were an attractive source of wealth and power that individuals would try to amass. Yet it also shows an attempt by the central administration to reestablish central authority after the dynastic civil wars, during which abuses became prevalent.

It would be a mistake to draw the conclusion from such instances that they represent the normal practice within the Ptolemaic administration. An extraordinary document containing the instructions of the finance minister, probably to the tax controller (*oikonomos*) of each nome, provides an idealized picture of how an official was supposed to behave. Among the duties described in detail, the tax controller was ordered to travel frequently within his nome on rounds of inspection. He was told to "cheer everybody up" and "if any [of the cultivators] accuse the village scribe or the village headman of anything touching agricultural work, you should make inquiry and put a stop to such doing as far as possible."¹⁴⁷ The text ends with some general advice. According to the finance minister, when deciding to appoint the official to his post in the nome:

I considered that your prime duty is to act with peculiar care, honestly, and in the best possible way... and your next duty is to behave well and be upright in your district, to keep clear of bad company, to avoid all base collusion, to believe that, if you are without reproach in this, you will be held deserving of higher functions, to keep the instructions in your hand, and to report on everything as has been ordered.¹⁴⁸

The passage throws light on the professional ethics as well as the ambition for advancement that the central administration tried to foster among its officials. It also underscores again the desirability of royal appointments and the potential competition for them. The use of these moral qualities as criteria for promotion illustrates one way in which the central government sought to keep its agents in line with royal interests. Even if some officials deviated from these standards, the Ptolemaic bureaucracy could not have functioned for as long as it did if these cases illustrated the normal practice.¹⁴⁹

The Ptolemies used two closely related methods to constrain officials: holding them financially liable and guaranteeing revenue with the help of tax farmers. To prevent embezzlement, the responsible officials could be expected to pay for any shortfall in revenue.¹⁵⁰ However, pressure on officials from above to meet financial obligations to their superiors was no safeguard from abuse for the population below them and might even encourage harsher fiscal predation.¹⁵¹ Using private tax farmers for certain types of revenue reduced this risk by relieving the royal officials of some fiscal responsibility and thereby preventing corruption.¹⁵² Tax farmers purchased the rights to state monopolies of certain goods or the revenue from certain taxes in exchange for a fixed annual amount. One might suppose that a tax-farming system, in which the winning bidder benefits when the returns exceed initial expectations, would give way to similar predation. However, the Ptolemaic tax farmers described, for example, in the Revenue Laws Papyrus of Ptolemy II did not collect the taxes

themselves, they only guaranteed the amount. In other words, royal officials collected the taxes and then after balancing the accounts (*dialogismos*) they paid the tax farmer the surplus if the returns exceeded his bid.¹⁵³

Royal officials and tax farmers not only worked together in fiscal matters but also had similar incentives. As shown above, Ptolemaic royal officials expected to profit enough for them to volunteer and even to pay for their offices as well as to accept the risk of being held financially accountable for shortfalls. Tax farmers likewise expected a financial gain from their service to the state, the major difference being that they purchased a specialized task of guaranteeing revenue under short-term contractual obligations. The manager of temple finance, the high priest discussed above, exemplifies the symbiosis of tax farming and Ptolemaic officialdom. He was supervised by higher officials, but his economic function was that of a tax farmer, who assumed responsibility for fixed payments while obtaining control of the temple estate for one year.¹⁵⁴ In a letter to the high priest of Khnum in Elephantine, the royal official in charge of the Thebaid gave him orders about collecting the emmer harvest taxes from the temple estate and delivering them to the royal granary.¹⁵⁵

The high priest differs from tax farmers discussed in the early Ptolemaic Revenue Laws Papyrus because he directly managed the temple's estate, including its harvest tax revenue, whereas they only guaranteed state income, leaving the actual collection to state officials. Though it has been suggested that tax farming was also used to collect grain taxes, the interpretation of the relevant texts is controversial.¹⁵⁶ There is no evidence that the Ptolemaic officials responsible for the receipt of the harvest taxes (*sitologoi*) were tax farmers, so one usually assumes that it was a voluntary and remunerative administrative appointment. On the other hand, tax-farming associations were used for collecting some local taxes in Ptolemaic Egypt. For example, a Demotic papyrus from 236 BCE contains a royal oath sworn by three Egyptians, who agreed to share the profits and losses involved in collecting the salt tax and

the cloth tax on weavers.¹⁵⁷ Such tax farming associations continued into the early Roman period, when they were gradually converted into compulsory public services.¹⁵⁸

The Ptolemies' use of tax farmers for collecting revenue from whole temples and communities is attested in Syria-Palestine. Though its details may be fictitious, a passage of Josephus narrating events of the late third century BCE claims that the notable men from the cities gathered in Alexandria to bid for the taxes. One man, Joseph, accused them of conspiring with low bids and offered a large sum for the taxes of the whole region.¹⁵⁹ We also know about the competition for the office of high priest of the Jewish temple in Hellenistic Jerusalem, whereby the successful bidder obtained the right to collect taxes in Judea.¹⁶⁰ The prevalence of tax farming in Syria-Palestine and in Egyptian temple contexts, was probably not a Greek innovation, but one derived from earlier Near Eastern (above all, Babylonian) institutions that may have become widespread in the Persian empire.¹⁶¹

The last century of Ptolemaic rule is the least well understood. It has been suggested that the weakness of the later Ptolemies caused them to cede more power to the temples.¹⁶² However, Bingen has argued that the series of asylum decrees used to substantiate this view should be seen instead as a feeble attempt by the king to protect the temples from local officials' predation.¹⁶³ For him, they illustrate "the slow but inevitable decline of the influence of the temples."¹⁶⁴ They were still crucial for legitimating the Ptolemaic dynasty and accordingly received royal protection and privileges. The problem was, as Bingen observes, that the Ptolemaic kings could no longer control their agents effectively. During times of acute instability, these agents who carried out orders, just like the rulers themselves, were more prone to maximize their own immediate revenue.¹⁶⁵

From the late third century onward, internal and external tensions forced the Ptolemies to increase their revenue by penetrating local power networks and subverting existing institutions.¹⁶⁶ One corollary of this process was the increasing integration of Egyptian priestly elites into the

military and royal administration during the second century and, conversely, the integration of soldiers and officials into the priesthood.¹⁶⁷ Another was the violent suppression of revolts. The failure of the Great Theban Revolt (207–186 BCE) seems to have led to the elimination of the hereditary dominance exercised by priestly families over Theban royal offices and their replacement by centrally appointed officials with limited periods of tenure. After another Theban revolt in 88 BCE, the families of Demotic notary scribes, whose office remained hereditary until that time, disappear from the record.¹⁶⁸ Thebes may have been unusual for holding out against the integration of local administrative offices into the royal hierarchy.

A decree from the Fayyum dated to the early second century BCE orders temple officials to draw up a list of eligible Demotic scribes for selection to the office of notary by the nome's governor (*strategos*).¹⁶⁹ In the case of temple scribes, the remuneration came from the earmarking of certain temple revenue for them, as described earlier in this chapter.¹⁷⁰ The appointment by a nome official from a list of pre-selected candidates resembles the later procedure of nomination to compulsory public services in the Roman period.¹⁷¹ The difference is that, as far as one can tell, the Ptolemaic nominees were eager to obtain the office and the state had no need to apply coercion. The ability of Ptolemaic officials to profit from their position furnishes an important contrast to the Roman system of compulsory public services.¹⁷²

To explain the administrative changes from the Ptolemaic to the Roman period, one must first understand them within their social and economic context. High levels of redistribution, the weakness of property rights, and the problem of monitoring state agents all contributed to making royal and temple offices an attractive source of wealth and power. For the rent-seeking tendencies that Bingen, Samuel, and Crawford describe the key variable was instability, which intermittently undermined the Ptolemaic state's ability to monitor its agents from the late third century BCE onwards. Revolts, military setbacks, loss of

territory, and dynastic tension forced the later Ptolemies to rely on an increasingly coercive redistributive apparatus, which must have had diminishing returns in terms of net revenue, allowing officials greater margins of profit and reducing everyone's incentive to invest in agricultural productivity or other economic activities.¹⁷³

Roman compulsory services

After Egypt became a Roman province, some of the most conspicuous long-term changes were in the metropolitan and village administration. Starting with tax collecting but ultimately extending to most offices within the nomes, previously voluntary positions became compulsory public services or liturgies. The reforms are consistent with one of the quintessential features of Roman imperialism: the reliance on local elites to bear most administrative responsibilities in exchange for stronger property rights and lower taxes.¹⁷⁴ As offices were no longer a means to gain wealth and status, self-government became a kind of tax, which people increasingly sought to avoid, if possible. The development of compulsory public services is thus another manifestation of the shifting sources of power under Roman rule.

The transition to municipal self-government was necessarily gradual since Egypt had been governed so differently in the Ptolemaic period. During the first century of Roman rule, there were simply fewer incentives for officeholders and tax farmers, so new rules had to be adopted for compulsory appointments. By the second century CE, a consistent system was applied for filling a vast range of metropolitan and village offices.¹⁷⁵ The higher-ranking state officials in each nome were not liturgical; they continued to be centrally appointed on a voluntary basis. They also performed many of the same functions as in the Ptolemaic period and even used the same titles.¹⁷⁶ For example, the so-called royal scribes, who oversaw the fiscal administration of each nome, were salaried officials in the Roman period, even after most subordinate offices had

become compulsory public services.¹⁷⁷ At the bottom of the social spectrum, there was continuity in the use of compulsory service on dikes, irrigation canals, and the cultivation of land from the Ptolemaic to the Roman period, though with some modification of the procedures and regularity.¹⁷⁸ True self-government was achieved only in the third century CE with the creation of town councils in each nome metropolis that thenceforth appointed candidates to municipal offices, taking over this role from state officials, who made appointments previously.¹⁷⁹

The Greek term *liturgy* (*leitourgia*) connotes any service whether it was compulsory or voluntary, paid or unpaid.¹⁸⁰ Weber used the term abstractly to denote service rendered to states that carried personal liability, whether voluntary or involuntary, but Oertel regarded this definition as too all-encompassing to explain changes in the nature of state service under Roman rule. In modern papyrological scholarship, it is used as a technical term for unpaid, compulsory services of limited duration rendered to the state.¹⁸¹ The Ptolemaic administration was, according to Oertel, not liturgical because people voluntarily sought to acquire offices and profited from doing so.¹⁸² The ancient terminology is often ambiguous but one can identify three broad categories of public services in Roman Egypt: prestigious metropolitan magistracies (*archai*); regular administrative offices (*leitourgiai*); and corvée labor (*leitourgiai somatikai*).¹⁸³ Usually only the second of these – regular administrative offices – is meant when one speaks about the liturgical system or compulsory public services in Roman Egypt.

It may help to explain the development of the liturgical system, however, if one views these not as separate categories but as points along a spectrum.¹⁸⁴ Some offices may have been easier to fill and required less coercion, so they remained voluntary for a longer period. Certain offices in Thomas' highest category – prestigious metropolitan magistracies – lacked volunteers and thus became compulsory only in the third century CE, after most regular

administrative offices were already liturgical.¹⁸⁵ Even the assignment of public land, which belongs to Thomas' lowest category, was not necessarily burdensome, and some landowners as well as peasants would take on the responsibility willingly.¹⁸⁶ Whether one would voluntarily hold an office or perform a public service probably depended on one's own status and the social and economic costs or benefits attached to it. Thus changes in either the social structure or the incentives for officeholding could have necessitated formal institutional changes.

To evaluate the relationship between administrative reform and broader social and economic changes, one would like to know when and how compulsory public services were introduced. Unfortunately, the period of transition is obscure owing to the scarcity of documents from the late first century BCE and the early first century CE. It is generally supposed that the second-century CE system was the result of a gradual transition. Rostovtzeff assumed, without any real evidence, that fiscal pressure from officials on tax farmers in the late Ptolemaic period led even then to sporadic use of compulsory service.¹⁸⁷ Oertel more cautiously dates the introduction of liturgies to the second half of the first century, closer to the first secure attestations of nomination to office based on wealth-assessments.¹⁸⁸ There is new evidence in favor of Wilcken's suggestion that compulsory officialdom existed already in the Julio-Claudian period, at least in the realm of tax collection.¹⁸⁹

It may be significant that the earliest attestations for compulsory public service at the beginning of the first century CE involve tax collection. Wilcken pointed to the switch from using associations of tax farmers (*telonai*) to using collection officials (*praktōres*) for certain taxes, starting with the tax on baths during the reign of Tiberius.¹⁹⁰ The latter were certainly held financially liable for the dues, but even in the 50s CE some were still effectively tax farmers who entered into voluntary contracts.¹⁹¹ A papyrus from 50 CE, however, shows that a tax collector (*praktôr*) could be coercively pressed into service, if necessary.¹⁹² In addition to this piece, Thomas cites as new evidence a papyrus

datable to the early first century CE that mentions someone who was appointed to the granary office (*sitologia*) even though he did not meet the necessary wealth qualification.¹⁹³ However, an earlier indication may be the reorganization of the temples under Augustus. As noted above, the tax-farming office of the *lesonis*, who managed and guaranteed the temple's revenue, was abolished and his role replaced by annually appointed temple elders (*presbyteroi*) and scribes, who could be held accountable for their term of service.

This is often thought to reflect an empire-wide Roman policy of curtailing tax farming and holding communities directly liable for their own taxation.¹⁹⁴ Yet voluntary tax farming co-existed with the appointment of liturgical tax collectors in Egypt until at least the second century CE. The most plausible explanation for its gradual demise is that there were diminishing expectations of financial gain causing a shortage of tax farmers, so that coercion was required.¹⁹⁵ For example, in the 50s CE, tax collectors (*praktoreis*) in the Fayyum, who were apparently working under voluntary tax-farming contracts, faced an economic crisis and came under massive pressure despite their pleas for remission.¹⁹⁶ The edict of the Roman prefect Tiberius Julius Alexander in 69 CE addresses the problem of finding volunteers to accept tax-farming leases. He recognizes that local officials have been applying coercion to perform tax-collection duties that were usually handled by tax farmers for profit, but he explicitly condemns the practice.¹⁹⁷ This suggests that the elimination of tax farming was not simply an order from above but rather a response to endemic problems.¹⁹⁸

Simply making the performance of the tax farmer's function a compulsory service raised additional problems necessitating further reforms. Most importantly, any shortfall in revenue from the Roman tax collectors fell on them personally, so it was important that they had sufficient wealth and that the office rotated within the community in order to share the burden.¹⁹⁹ This would be achieved by the development of formal mechanisms for property assessment

and nomination described below. In the case of the poll tax and other direct money taxes, there were additional reforms in the reign of Trajan (98–117 CE), creating new liturgical tax officials who had greater powers to collect delinquent revenue and could convert deficits from a previous year into a surtax on the village or urban district in the subsequent year.²⁰⁰ Ultimate oversight of and liability for tax collection fell to the nome governor, who performed a monthly evaluation (*diakrisis*) of the tax collectors' progress.²⁰¹ The imperial government was obviously responsible for reforms, but it seems to have responded to dynamic social and economic conditions by repairing a dysfunctional system rather than implementing changes planned from the beginning of Roman rule.

The transition to compulsory public services in the rest of the administration may have had the same cause as the transition from tax farming. In the Ptolemaic period there were socioeconomic incentives for seeking appointment to royal offices, not least the salary and prestige; but often there were opportunities for illicit gains as well through patronage and the extortion of services from others. There would be no need to apply coercion if there were still sufficient incentives to attract volunteers in the Roman period. While officials sometimes engaged in corrupt, rent-seeking practices, the Roman administration could put more pressure on its agents, making it more difficult for them to convert public offices into sources of private revenue. During the second century CE compulsory public services spread to the whole spectrum of administrative offices and during the third century CE even honorary municipal offices became compulsory.²⁰²

The basic characteristics of this liturgical system – wealth-assessment, compulsory nomination, limited term, financial liability – were already evident in the first century CE starting with the tax collection offices. The edict of Tiberius Julius Alexander of 69 CE exempts Alexandrian citizens from liturgies in the country (*chora*), that is, in the cities and villages of Egypt outside Alexandria. Though the term is ambiguous, these “liturgies” probably refer to administrative

offices, not to corvée labor, because otherwise this would imply that they did have labor duties in Alexandria, which is unlikely.²⁰³ If so, the Alexandrians' exemption implies that they were compulsory for non-citizens in the countryside. According to an oath dating less than two years later, in 70 CE, the appointee as overseer of dike-work (an administrative office) swore to undertake the necessary construction and repair work, presumably at his own expense but using corvée laborers assigned to him. He attaches a valuation of his own property totaling 23,500 drachmas, a large sum, as security for his performance. This suggests that the wealth-assessment (*poros*), which was certainly used for this office by the early second century CE, was already being used, but the manner in which it is mentioned is unlike later practice.²⁰⁴

The prefect Mettius Rufus (89–91 CE) clarified the rules for appointments to liturgies in a circular letter to the governors of each nome. This excerpt is from a compilation of edicts of later prefects, dealing mostly with the exemption for members of the same family when another member was already performing a compulsory service:

From the orders of Mettius Rufus given to the nome governors (*strategoî*). If you think that any of those in public service are unfit because their wealth-assessment is not sufficient or because of bodily weakness or if they appear otherwise inappropriate, you will send me three names for each one after examining them, so that all are suitable not only in property but also in age and in the personal conduct that it is necessary for those entrusted with authority (*ta kyriaka*) to have. For this reason you will also provide the wealth-assessment, age, whether they are literate, and whether they have previously held any offices. You will take care that the three are not from a single household, but also not from the same place, and that they have not previously been in the same offices, that they have not been judged derelict in other offices, and that officials in the same place are not related to them.²⁰⁵

The terminology suggests that the system for selecting candidates for administrative offices on the basis of a wealth-assessment was already in place. Thus it is a reasonable assumption that these were compulsory services.²⁰⁶ On the other hand, one cannot rule out on the basis of this text alone whether some people still sought the nomination voluntarily, nor whether it was inevitably a financial burden.²⁰⁷ The orders from the prefect are that the nome governors should be selective and choose only men who are fit for office. Here it is also connected with the moral qualities of the individual, his personal conduct or way of life (*hê tou biou agogê*) required to exercise state authority.²⁰⁸ This suggests that such authority carried a certain degree of power and prestige that not just anyone could have. The wealth-assessment may have served primarily to ensure that officials could be held liable for any unfulfilled obligations. It is conceivable, however, that the wealth-assessment also benefited rich landowners collectively by excluding the poor from important positions in local government.

Office holding was of limited duration, usually one or three years, and rotated among those with the requisite wealth. There were even technical terms for someone who qualified (*euporos*) and one who did not (*aporos*). The wealth-assessment (*poros*) was the estimated money value of a person's real property.²⁰⁹ Starting in the second century CE, there are surviving lists of village or urban residents and their assessments used by the village or city scribes to nominate individuals for liturgies.²¹⁰ Some scribes seem to have kept a separate list of very rich people that they could call on when needed.²¹¹ Mettius Rufus' orders, quoted above, detailed what steps the nome governor should take to replace unsuitable nominees. A text from the Apollonopolite Heptakomias nome dating to 116 CE records the office and the wealth-assessment of people who have just completed the maximum three-year period of service, including tax collectors, public archivists, dike overseers.²¹² The editor notes that these were rich people, whose wealth ranged from 7,600 to 50,600 drachmas each. Comparable data for wealth-assessments of administrative officials from other

nomes show a range of only 200 to 6,000 drachmas.²¹³

A dispute over the state archives in the metropolis of the Arsinoite nome nicely illustrates the relationship between wealthy landowners, state coercion, and the provision of public services. In 90 CE the prefect Mettius Rufus learned that the documents were old and worm-eaten.²¹⁴ He ordered the two keepers of public records (*bibliophylakes demosion logon*) to repair the documents at their own expense by checking them against copies stored in Alexandria.²¹⁵ These two officials were appointed to three-year terms, presumably as a compulsory public service based on wealth-assessments. Their status as ex-directors of the city gymnasium suggests that they belonged to the metropolitan elite.²¹⁶ Nevertheless, they balked at paying the expense and sought to shift the blame for the archive's condition to their predecessors. Evidently, at the end of each three-year term the two keepers were obligated to turn over the entire archive in good condition or else pay for repairs. If new keepers accepted damaged rolls, they would become responsible for repairing them, and that liability even passed to their heirs.

Years later, the heirs of one former keeper were still pleading to be released from their financial responsibility. They claimed that their father had performed another great service during his time in office that should entitle them to relief in the dispute over the public-records archive. He rebuilt the dilapidated property archive (*bibliothekê enkteseon*), which was housed in a separate building, and restored its documents on orders from the prefect.²¹⁷ This was the archive where private individuals of the nome could have real property, such as houses and agricultural land, registered to them for legal security. It served at least two different functions. On the one hand, it enhanced the property rights of landowners and lowered the cost of transactions by confirming legal title for contracts. On the other hand, it provided the state with information that village and city scribes could use for the wealth-assessment and for nomination to compulsory public services.²¹⁸ From the Arsinoite case, we learn that the property archive could

even be used to identify the assets of one of the former public record keepers, who had not fulfilled his financial obligations, in order to have them confiscated and sold.²¹⁹

The archive keepers' complaints indicate that these were extraordinary demands, so metropolitan elites may still conceivably have volunteered for such offices under normal circumstances. However, if they were nominated from a list of property owners, it seems unlikely that they could have refused. There are also indications in other sources that nominations to administrative offices were generally involuntary and perceived as a financial burden. In the second century and then increasingly in the third century CE, nominees often sought exemptions or even fled to escape their duties.²²⁰ When they fled, any assets left behind would be confiscated and sold.²²¹ The wealth-qualification would have served to protect poorer people from potentially ruinous financial liability and not merely to exclude them from administrative authority. The scribe who appointed someone with insufficient wealth to a liturgy could be penalized with a fine or be required to perform the compulsory service himself. If someone failed to perform a compulsory service, his community could be held collectively liable.²²² An edict of the prefect Vibius Maximus (103–107 CE) ruled that exempted professionals such as weavers and priests were still liable for the liturgy of cultivation if they owned private land and if their wealth exceeded one talent. In this case, therefore, the wealth-assessment was used to prevent capable people from shirking public service.²²³

Unless there were tangible social and economic incentives, as in the Ptolemaic period, some element of coercion was probably necessary. The Roman fiscal regime involved less redistribution through the hands of state and temple officials with fewer opportunities for personal gain. The increasing value of private assets due to lower taxes on land, as argued in the previous chapter, would have made agricultural investment more profitable, relieving some of the demand for elites to enrich themselves from service to the state or temples.²²⁴ However, lower taxes also meant that the

Roman empire provided much less in the way of spending on public administration in its provinces.²²⁵ In order to maintain the institutions that ensured local security, protected property rights, and prevented land and irrigation networks from falling into disrepair, the village and urban communities themselves had to bear responsibility for performing and financing public services. There would be incentive for individuals to be free riders by evading such duties if there were no compulsion. The case of the property-archive building in the Arsinoite nome, which the responsible officials were reluctant to repair at their own expense, illustrates the tension between individual and collective interests among the provincial elite that the system of compulsory public services was able to alleviate.

This still begs the question of why there were ever fewer socioeconomic incentives to volunteer for tax farming and administrative offices under Roman rule. The transition to the system of compulsory public services probably began with tax collection in the early first century, but compulsory and voluntary methods of filling offices seem to have co-existed during the first century CE. Many of the corrupt practices to which Ptolemaic officials resorted in order to profit from their offices continued in the Roman period. However, officials who managed state revenue probably came under more pressure. This may be linked to the ostensible decrease in state revenue after the Julio-Claudian emperors lowered taxes on private land and auctioned away much of the state land. This would help explain the resistance to the new Roman tax policy. Several prefects had sought to re-impose the old Ptolemaic-style harvest taxes on private landowners.²²⁶ In 69 CE, the prefect Tiberius Julius Alexander explicitly condemned this practice, coming to the landowners' defense, just as he did concerning their attempts to force tax farmers to accept contracts against their will.²²⁷ Giving taxpayers relief meant shifting some of the burden onto tax collectors and curbing officials' ability to siphon off surplus production.

Conclusion

Compulsory public services and the economic decline of Egyptian temples in the Roman period illustrate the same fundamental shift in the sources of power. Whereas Ptolemaic elites obtained wealth and status by acquiring royal or temple offices, in the Roman period the ownership of real property gained more significance. The low fixed taxes that extended to all private land help explain the new importance of land ownership, which subsequent economic and population growth may well have amplified. Lower taxes also meant less gross revenue available for the state and temple administration unless the imperial government improved its net intake by limiting the opportunities for its agents to siphon away resources and abuse the productive population. The Romans accordingly reduced the profits of priestly offices by removing land from temple administration, converting it into private or public land, and exercising stringent oversight of temple finances. They put pressure on tax farmers that made them less willing to accept contracts, and they expected more financial sacrifice and liability from state officials.

This shift reveals a fine distinction in the nature of the state's coercive power. In previous scholarship, Ptolemaic Egypt has often been portrayed as a despotic state with a highly centralized bureaucracy.²²⁸ The problem with this view is that the Ptolemies had relatively little control over their own agents in the nomes, who were responsible for much of the exploitation and arbitrary requisition that create the impression of despotism.²²⁹ The Ptolemies' dependence on the Egyptian priesthood for legitimacy and expertise made it necessary to concede fiscal privileges to the temples, which redistributed the wealth of their estates to hereditary priests. The widespread use of tax farming only strengthens the conclusion that the Ptolemaic state could not adequately monitor its own agents and sought alternative means to prevent corruption. As Kiser has argued, tax farming is historically common whenever the costs of monitoring agents are high.²³⁰ Dynastic instability and unrest must have made it harder for the state to rein in local officials despite repeated decrees condemning predatory practices.

The Roman provincial government during the first two centuries CE was in a more secure position. In some respects imperial Rome was a stronger state with greater coercive power. The administration maintained property archives with vast information about individuals' private assets. Village and city scribes kept their own lists with an assessment of the total wealth of each local resident. They used the lists to nominate them for one- or three-year terms to perform compulsory public services in the administration and in the agricultural economy. These institutions also helped to spread the financial burden of government over the whole community and to enforce liability by confiscating assets when necessary. Despite its power, the early Roman empire is not usually regarded as a centralized state, at least not in comparison with Ptolemaic Egypt or the later Roman empire. Rather than relying on a professional bureaucracy, it shifted power to landowning urban elites, making them responsible for their own local self-government. The financial burden and the mechanisms of enforcement were the price that local elites paid for stronger property rights and lower taxes. These advantages legitimated the element of coercion that was necessary to prevent free-riding. They reinforced an ideology of civic pride and loyalty to the empire that supplanted the traditional role of the pharaoh, from whom elites used to derive their status and wealth.

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- ¹ Thomas (1983); Jördens (2009: 267–71).
 - ² Rostovtzeff (1920: 164–5; 1941: 272–3); Eyre (1994: 107–8) defends the concept of feudalism.
 - ³ Samuel (1989: 51–65); Bingen (2007 [1989]: 271–2) approvingly refers to Rostovtzeff (1941: 896), where the latter admits to the rise of an aristocracy of “selfish, greedy, and lawless officials” in late Ptolemaic Egypt.
 - ⁴ Bingen (2007 [1984]: 193).
 - ⁵ Bingen (2007 [1981]: 248–9; 2007 [1984]: 191, 203–4); cf. Samuel (1989: 35–49).
 - ⁶ Krueger (1974); Buchanan (1980); Tullock (1980).
 - ⁷ For the combination of priestly and military offices, see Fischer-Bovet (2008: 303–333); cf. P. Berlin Dem. 13638 (146 BCE; Tebtunis) = Erichsen (1962), a text

mentioning a cavalry officer as prophet of Soknebtunis in 142 BCE.

- ⁸ See Hickey (2009: 503–6) for one particular case.
- ⁹ For fiscal domains, judicial functions, and the management of temple estates, see Chapter 4.
- ¹⁰ Thompson (1988: 106–54); Huss (1992); Lloyd (2002); Gorre (2009: 557–603); for increasing integration, see Clarysse (2000); Manning (2006: 263–4); Fischer-Bovet (2008: 303–33).
- ¹¹ Zauzich (1980); Pfeiffer (2004: 76); the Greek spelling and declension of the Egyptian title *mr-šn* were never standardized, but the third-declension form used here, *lesonis*, plural *lesones*, was common, e.g. BGU III 916 (69–79 CE; Arsinoite), lines 9 and 25.
- ¹² Arlt (2008; forthcoming); cf. P. Tebt. I 6 = W. Chr. 332 = C. Ord. Ptol. 47 (139 BCE; Arsinoite).
- ¹³ The “shrine-bearers” (Greek *pastophoroi*, Egyptian *iry-c³*.w) formed a second tier below the priests associated with the temple and could also profit from various religious services; Otto (1905: 94–113); Schönborn (1976); for Quack’s reading of the title as *iry-c³* instead of *wn* or *wn-pr*, cf. Zauzich (2000: 47–8).
- ¹⁴ Otto (1905: 23–38); Pfeiffer (2004: 76–9).
- ¹⁵ Pfeiffer (2004: 106–12, 115–17).
- ¹⁶ Otto (1905: 37–8); Pfeiffer (2004: 117–19).
- ¹⁷ Otto (1905: 203–30); Pfeiffer (2004: 239). For the admission of priests in the Ptolemaic period, Glanville (1933) and Di Cerbo (2004: 114–16).
- ¹⁸ P. Tebt. II 291 (162 CE; Tebtunis, Arsinoite).
- ¹⁹ The backside of the so-called *Zivilprozessordnung*: Spiegelberg (1929: 16–22); Sethe and Spiegelberg (1929: 18–20).
- ²⁰ P. Ryl. Dem. 9, col. 13, lines 4–8, with comments on p. 90, note 5; Vittmann (1998: II 490); 20 out of 100 equals 1/5 of the temple income, exactly the share to which all prophets in temples with a shrine (*naos*) were entitled according to the *Gnomon of the Idios Logos*, a legal compilation of the Roman period, BGU V 1210, col. 8, line 191, §79; Uxkull-Gyllenband (1934: 87–8).
- ²¹ An example of such a list is P. BM EA 10647 (II or I cen.

BCE; Tebtunis) = Monson (2006). Col. 5, line 1, should perhaps be translated as “we will give you the name of the *lesonis*” (instead of “the list of the *lesonis*”), which would imply that the text was addressed to a state official such as the overseer (*epistatês*) of the temples and that the state had some role in confirming the list of priests eligible for shares of revenue.

- 22 Kaplony-Heckel (2004).
- 23 P. Cair. II 30611 (94 BCE; Tebtunis, Arsinoite).
- 24 See the discussion in Chapter 4, pp. 114--17, 131--6; cf. P. Cair. II 30631 (86/85 BCE; Tebtunis, Arsinoite).
- 25 P. Ryl. Dem. 9, col. 1, line 3; Chauveau (2004: 21–2) rightly reads this line: *n-t³y n lr(=y) (n) ḥm-ntr 'Imn T³y = w-dy lr p³ snty*, “since the *snty* made me prophet of Amun in Teudjoi.” For *snty* as the Aramaic term for the Persian finance minister in Egypt, equivalent to the Ptolemaic *dioiketês*, see Yoyotte (1989); Vittmann (1998: II 296–98).
- 26 P. Eleph. Dem. 6 = P. Bürgsch. 14 (225 BCE; Edfu, Apollonopolite), line 21.
- 27 P. Eleph. 14 (222 BCE; Edfu, Apollonopolite); for the composition of this archive, see Clarysse (2003).
- 28 Though also translated as “high priest” (*archiereus*) in Greek, the title *wr-ḥpr-ḥmw* refers to a specific priestly function and should not be confused with the *lesonis*; see Quaegebeur (1980: 55 n. 1; cf. 1995: 155–8); Thompson (1988: 131–2, 138–45); Gorre (2009: 285–384, 605–22); PP III 5351–5376.
- 29 See the prosopography and analysis by Gorre (2009: 1–450) of priestly families from over twenty different Ptolemaic nome capitals and major cities throughout Egypt.
- 30 For prophets, see PP III 5425–5919, IX 5426–5919c; cf. Crawford (1971: 91 n. 5).
- 31 P. Tebt. I 88 = W. Chr. 67 (115/114 BCE; Tebtunis, Arsinoite), lines 2–4: γραφή ἱερῶν καὶ προφητηῶν καὶ ἡμερῶν λειτουργικῶν καὶ τῶν ὑπαρχόντων.
- 32 Cf. *Gnomon of the Idios Logos*, BGU V 1210, col. 8, line 191, §79.
- 33 P. Tebt. I 88, lines 5–15; cf. lines 26–7: “the $\frac{1}{5}$ they own

through their father,” τὸ δὲ εἴ κρατεῖν τοὺς αὐτοὺς παρὰ πατρός. Similar is the purchase from the state of a prophetic office, an ibis sanctuary, and half its land by two brothers in Thebes: UPZ II 153–5 (255/254 BCE; Thebes).

- 34 SB XVI 12519 (mid II cen. BCE; Arsinoite).
- 35 CPR XXIX 8 (42 BCE); cf. CPR XXIX 2 (122 BCE), 3 (119 BCE), and 9 (42 BCE), likewise from Soknopaiou Nesos. The editors regard these as sales of service days rather than of the sanctuary itself, but the language of the documents supports the latter interpretation; cf. Monson ([forthcoming d](#)).
- 36 P. Tebt. I 6 = W. Chr. 332 = C. Ord. Ptol. 47 (139 BCE; Arsinoite).
- 37 The last of these – collections of precious objects and the revenues of *aphrodisia* – are obscure and may be peculiar to the temple of this (uncertain) goddess: see P. Tebt. I p. 64 n. 26 and n. 29.
- 38 P. Tebt. I 6, lines 30–6.
- 39 UPZ I, p. 44–45; De Cenival ([1972](#): 154–9); cf. PP III 5377–5421, IX 5377–5422b.
- 40 Martin ([1996](#): 289–95) provides translations of the texts with further bibliography.
- 41 Menu ([1994](#): 321–5; [1998](#)).
- 42 P. Berlin Dem. 13543 = Zauzich ([1978](#)).
- 43 Clarysse ([2003](#)) and, most recently, Manning ([2010](#): 117–20).
- 44 Clarysse ([2003](#): 22–3).
- 45 P. Tebt. VI 1165 ([forthcoming](#)) = Monson ([forthcoming c](#)). The text resembles a fragmentary agreement between the *lesonis* and the prophet of Soknebtunis, P. Berlin Dem. 13638 (146 BCE; Tebtunis) = Erichsen ([1962](#)).
- 46 Wilcken (1927: 44–5); Clarysse ([2003](#): 21–2).
- 47 P. Eleph. Dem. 6 = P. Bürgsch. 14 (225 BCE; Edfu, Apollonopolite); Sethe ([1920](#): 342–4) had access to the original, but Clarysse ([2003](#): 20) still doubts his reading based on the photographs.
- 48 For wheat equivalences, see Maresch ([1996](#): 181–2) and Cadell and Le Rider ([1997](#): 28–31).
- 49 P. Tebt. VI 1165 ([forthcoming](#)) = Monson ([forthcoming](#)

c), line 11. The 74,411 deben could be the money equivalent for wheat or barley revenue, as in Sethe's suggestion for P. Bürgsch. 14, since the next line mentions 37,986 for emmer and, though the latter could be deben or artabas, the following text contains explicit conversions to money.

- 50 Egyptian temples also employed tax farmers for collecting their own traditional revenues; see P. Ox. Griff. 42–55 (II cen. BCE; Soknopaïou Nesos).
- 51 Rostovtzeff (1941: 273); Préaux (1939: 450–1); Bingen (2007 [1978a]: 160); Manning (2010: 152–3).
- 52 Babylonian texts show that private tax farmers were chosen to guarantee temple revenue, but starting in the reign of Darius I they were chosen from among the local priesthood: Kleber (2008: 50); Frahm and Jursa (2011: 22). The reform is perhaps related to a decree of Darius cited in the Elephantine temple's correspondence with the Egyptian satrap about the necessary qualifications for priests' appointment to the office of *lesonis*; P. Berlin Dem. 13540 = Spiegelberg (1928), English translation, Martin (1996: 290–1).
- 53 Thompson (1988: 271–6).
- 54 Bowman and Rathbone (1992: 107–8); De Meulenaere (1959: 8–9); ST 159–74 = Vleeming (2001).
- 55 Bagnall (1993: 268); Frankfurter (1998: 27–30).
- 56 P. Tebt. II 302 (71/72 CE; Tebtunis, Arsinoite).
- 57 See Chapter 4, pp. 136–41.
- 58 See the data on personal status and land markets in Chapter 4, Figures 4.1 and 4.2.
- 59 Whitehorne (1980: 220–1).
- 60 BGU IV 1199 (4 CE; Busiris, Herakleopolite); trans. Lewis (1983: 92).
- 61 Wilcken (1899: 241–2); Otto (1905: I 37, II 62–3); Kruse (2002: 709–10, 767–71); cf. Glare (1993: 47).
- 62 Nelson (1979: 60–2); Kruse (2002: 728–33); cf. P. Tebt. II 291–93.
- 63 Kruse (2002: 711–16, 719–28); P. Oxy. XLIX 3470–1 (131 CE; Oxyrhynchus).
- 64 Kruse (2002: 713); P. Tebt. II 298 = W. Chr. 90 (107/108 CE; Tebtunis, Arsinoite).

- ⁶⁵ Swarney (1970: 57–9, 75, 81, 83–96).
- ⁶⁶ Kruse (2002: 710–11 n. 2013) points out that the two offices were not merged, as previously thought.
- ⁶⁷ *Gnomon of the Idios Logos*, BGU V 1210; Uxkull-Gyllenband (1934).
- ⁶⁸ BGU V 1210, col. 1, lines 1–7; cf. Bowman and Rathbone (1992: 113–14).
- ⁶⁹ Haensch (2008: 85–6); an example of continuity is the law about prophets receiving $\frac{1}{5}$ of temple revenue, mentioned above, note 20.
- ⁷⁰ BGU V 1210, col. 8, lines 181–2, §71; Uxkull-Gyllenband (1934: 77–9).
- ⁷¹ There are exceptions, such as a priestly family in Tebtunis that owned land, but they are rare: P. Mich. V 263 (35 CE) and P. Mich. V 322a (46 CE), with the editor's comments, P. Mich. V, pp. 18–20.
- ⁷² P. Lond. II 359 (mid-II cen. CE; Soknopaiou Nesos, Arsinoite); SB VI 9066 (138–161 CE; Soknopaiou Nesos, Arsinoite); Whitehorne (1978: 324–5; 1979: 146–8); Kruse (2002: 760–6).
- ⁷³ Whitehorne (1978: 326–7; 1980: 226).
- ⁷⁴ Montecvecchi (1932); Gilliam (1947: 191–8); Burkhalter (1985); Kruse (2002: 711–16).
- ⁷⁵ E.g. SB VI 9320 = P. Bacch. 2 (171 CE; Bacchias), SB X 10281 = P. David 1 (after 138 CE; Soknopaiou Nesos), BGU XIII 2217 + 2219 (after 161 CE; Soknopaiou Nesos), P. Tebt. II 298 (107/108 CE; Tebtunis), P. Oxy. XLVI 3275 (c. 103–111 CE; Oxyrhynchus).
- ⁷⁶ Lippert and Schentuleit (2006: 11–12, 21–22).
- ⁷⁷ Lippert and Schentuleit (2005: 75; 2006: 11–12, 21–2, 65–67, 74); the fact that they returned the profits to the temple does not justify their conclusion that they were tax farmers (2006: 21), but the authors may have further information from the unpublished agreements (2006: 12, 74). In an unpublished text, these officials have dealings with others who are called *tns.w*, which Lippert and Schentuleit (2005: 75; 2006: 12) read as the Greek word *telonês*, “tax farmer,” with an Egyptian plural ending.
- ⁷⁸ Similarly, Whitehorne (1980: 221).
- ⁷⁹ Kruse (2002: 733–50); cf., e.g., W. Chr. 81 = Sel. Pap. II

- 425 (197 CE; Panopolis, Panopolite).
- ⁸⁰ P. Tebt. II 295 (126–138 CE; Tebtunis, Arsinoite).
- ⁸¹ Drexhage (1991: 11–24).
- ⁸² P. Tebt. II 294 = W. Chr. 78 (147 CE; Tebtunis); see editors' comments, P. Tebt. II, pp. 63–5.
- ⁸³ Cf. *Gnomon of the Idios Logos*, BGU V 1210, col. 8, line 191, §79.
- ⁸⁴ For rents of six to eight artabas of wheat per aroua, Drexhage (1991: 155–79); Rowlandson (1996: 247–52).
- ⁸⁵ P. Tebt. II 296 (123 CE; Tebtunis) and 297 (c. 123 CE; Tebtunis) with the editors' comments pp. 64–5; keeping such rights hereditary is the subject of priests' petitions in P. Vind. Bosw. 1 (87 CE; Soknopaiou Nesos?) and SB XVI 12685 = SPP XXII 184 (139 CE; Soknopaiou Nesos, Arsinoite); Kruse (2002: 743–5); cf. BGU V 1210, col. 8, lines 189–90, §77–8; Uxkull-Gyllenband (1934: 83–7).
- ⁸⁶ Wegner (2011); cf. P. Lund. III 9 = SB V 8749 (c. 123 CE; Tebtunis or Akoris).
- ⁸⁷ P. Tebt. II 298 (107/108 CE; Tebtunis), line 46.
- ⁸⁸ P. Tebt. II 298, lines 67–69; for daily wheat, see Lippert and Schentuleit (2005: 76–77; 2006: 20, 181–3); cf. P. Louvre I 4 (pre-166 CE; Soknopaiou Nesos, Arsinoite), lines 43–4.
- ⁸⁹ Crawford (1971: 96–7).
- ⁹⁰ P. Tebt. II 302 (71/72 CE), line 14; the 200 artabas of barley can be converted at a ratio of 3:5 to wheat.
- ⁹¹ On the distribution of land in late Roman Egypt, see Bowman (1985) and Bagnall (1992).
- ⁹² Cf. Jördens (2009: 264–5).
- ⁹³ For the Ptolemaic *lesonis* in Soknopaiou Nesos, see e.g. P. Amh. II 35 = W. Chr. 68 (132 BCE; Soknopaiou Nesos, Arsinoite); for the Roman changes, Zauzich (1980: 1008) and Lippert and Schentuleit (2006: 15–18).
- ⁹⁴ Lippert and Schentuleit (2006: 9–14, 15–16, 65, 186).
- ⁹⁵ Cuvingy (1986: 118–30); comments in P. Vind. Tand., pp. 139–42; cf. SB I 5252 (65 CE; Nilopolis, Arsinoite) and BGU III 916 (69–79 CE; Arsinoite).
- ⁹⁶ P. Dime II 18–21; Lippert and Schentuleit (2006: 10–11, 66, 94) refute the assumption that it was a tax used to pay the *lesonis* a salary, cf. P. Amh. II p. 44; Otto (1905:

- 238–40); P. Zauz. 60–2 with Ryholt (2004: 528–30); P. Louvre I 4 (pre-166 CE; Soknopaiou Nesos), line 13.
- 97 Lippert and Schentuleit (2006: 2–3).
- 98 P. Vind. Tand. 21 (I cen. CE; Soknopaiou Nesos?), with the editor's notes, pp. 139–42: ἐπὶ τῇ πατρικῇ τῶξει προφητείας καὶ λεσωνείας; cf. P. Vind. Bosw. 1 (87 CE; Soknopaiou Nesos?), lines 29–31.
- 99 P. Tebt. II 295 (c. 126–138 CE), lines 10–11: προφητείας καὶ λεσωνείας τῆς καὶ βαιοφορίας; P. Lund. III 9 = SB V 8749 (c. 123 CE; Tebtunis or Akoris); cf. P. Vind. Bosw. 1 (87 CE; Soknopaiou Nesos?), lines 29–31, where the same combination occurs, and P. Tebt. II 313 (210/211 CE), line 6, where a high-ranking priest in Heliopolis is called a former *lesonis*.
- 100 Grenfell and Hunt, P. Tebt. II, p. 69, n. 11, suggest that adding the office of *lesonis* to that of prophet explains the higher bid.
- 101 P. Louvre I 4, line 13: “for the office of prophet, *lesonis*, and god-bearer” ὑπὲρ προφητείας καὶ λεσωνείας καὶ θεαγείας; cf. the editor's note on p. 32. The connection between these offices is obscure. It was perhaps one payment for a single priest who held all three titles, as in the case of the “prophet and *lesonis* or palm bearer,” where *baiophoria* appears in place of *theageia*: P. Vind. Bosw. 1 (87 CE; Arsinoite), lines 29–31; P. Lund. III 9 = SB V 8749 (c. 123 CE; Tebtunis or Akoris); P. Tebt. II 295 (c. 126–138 CE), lines 10–11.
- 102 On *theageia*, Egyptian $\text{t}^3\text{-y-ntr.w}$, see Quaegebeur (1984) and Dils (1995).
- 103 In Tebtunis, SB XII 11041 (20–21 CE), P. Mich. XII 632 (26 CE), V 314 (c. 30 CE), line 5, V 349 (30 CE), V 322a (46 CE), lines 34, 37, 40; in Theadelphia, one appears in a list of public farmers in P. Berl. Leihg. II 44 (157/158 CE), line 19.
- 104 Story of Petiese son of Petetum, col. 3, lines 12, 15, 24; see Ryholt (1999: 76, 88), who dates the manuscripts to the late I or early II cen. CE and the original to the IV cen. BCE.
- 105 Ptolemaic period: P. Berlin Dem. 3115 = P. Assoc. p. 103–35, P. Erbach = Spiegelberg (1905); Roman period:

- ST 60, 61, 122, 159, 165–7, 170–4 = Vleeming (2001).
- 106 Monson (2007b: 187–9, 192–3); Monson (2007c: 775); cf. Muhs (2001: 16, 18–19), who draws an analogy with the imitation of city magistrates in Greek and Roman private associations.
- 107 Attested as early as 1 CE, P. Tebt. II 525 (c. 1 CE; Tebtunis) and 14 CE, SB I 5240 (14 CE; Arsinoite), see Oertel (1917: 138); cf. Otto (1905: 47–50).
- 108 Rostovtzeff (1909: 615) followed by Wilcken (1912: 127); Oertel (1917: 137–9).
- 109 Oertel (1917: 137–9); land leasing: P. Tebt. II 298 (107/108 CE) and 310 (116/117 CE).
- 110 SB XVI 12685 = SPP XXII 184 (139 CE; Soknopaiou Nesos, Arsinoite); Sijpesteijn (1981); cf. Kruse (2002: 743–5).
- 111 Kruse (2002: 713); e.g. P. Tebt. II 298 (107/108 CE), lines 75–80.
- 112 P. Tebt. II 315 = W. Chr. 71 (II cen. CE; Tebtunis); trans. by the original editors.
- 113 Lippert and Schentuleit (2005: 78; 2006: 18–19); cf. P. Rain. Cent. 5 (95 CE; Soknopaiou Nesos).
- 114 Cf. Rostovtzeff (1909: 615).
- 115 Clement of Alexandria, *Stromateis* VI 4.37.1.
- 116 Glare (1993: 37–8).
- 117 Kákosy (1995: 2907–17); Alston (2002: 198–207).
- 118 Bagnall (1993: 261–8).
- 119 Crawford (1979); in a similar vein, Veisse (2004b).
- 120 Samuel (1989: 51–65).
- 121 Bingen (2007 [1984]).
- 122 Rowlandson (2007a).
- 123 P. Col. Zen. II 120 with notes pp. 185–8; Clarysse (1991: 243); Rowlandson (2007a).
- 124 Uebel (1968); Fischer-Bovet (2008: 208–13).
- 125 P. Petr. II 13 (17) (255/254 BCE; Arsinoite); Reekmans (1970).
- 126 P. Lond. VII 2074 (c. 249/248 BCE; Arsinoite); for discussion of the text and the terms for salary, see Reekmans (1970) and von Reden (2007: 130–41, 220–2): “While *opsônon* was a monetary wage, *sitometria* was a grain ration paid daily or monthly in the form of bread

or flour” (von Reden, 138). Another word used for “salary” is *syntaxis*: McGing (2004: 86).

- 127 P. Lille I 3 (after 216/215 BCE; Magdola, Arsinoite), col. 3, lines 42–7; Kruse (2002: 52–9); Haensch (2008: 100).
- 128 P. Count 12 (243–217 BCE; Arsinoite), lines 146–51; Clarysse and Thompson (2006: 54, 166, 172–3); for the payment of part of some officials’ salary (*opsonion*) in wine, see Clarysse and Vandorpe (1998: 15–6); for salaries paid river guards (*potamophylakes*), see P. Köln XII 482 (131 BCE; Herakleopolite).
- 129 Clarysse and Lanciers (1989: 127–32); see, for example, P. Strasb. II 105 (211 BCE; Techtho?, Herakleopolite); UPZ I 14 (157 BCE; Memphis), lines 47–9, 70–80 with Wilcken’s comments p. 164; the postal officials (*bibliophoroi*), who were paid rations in BGU VI 1232 (110 BCE; Oxyrhynchite), may have been associated with the military; cf. P. Oxy. IV 710 = W. Chr. 436 (111 BCE; Oxyrhynchite).
- 130 See especially P. Tebt. I 97 (118 BCE, Kerkeosiris) with the editors’ introduction; P. Tebt. I 61b, line 342 n. (117 BCE; Kerkeosiris); P. Tebt. I 189 (early I cen. BCE; Theogonis, Arsinoite); P. Tebt. I 5, line 63 n. (c. 118 BCE); Wilcken (1899: 366); Oertel (1917: 37); Verhoogt (1998b: 134–9); cf. Wallace (1938: 28–9, 70, 236–7) for the Roman period.
- 131 P. Berl. Salm. 16 (85 BCE; Herakleopolite).
- 132 *Contra* Crawford (1978: 201).
- 133 P. Tebt. I 9–11 (119 BCE; Kerkeosiris, Arsinoite); Verhoogt (1998b: 54–67).
- 134 P. Tebt. I 5, lines 162–7 with editors’ note; Crawford (1978: 201).
- 135 P. Tebt. I 5, lines 19–21 with editors’ note; Crawford (1978: 201 n. 71).
- 136 Crawford (1978); P. Tebt. I 34, 40 with editors’ notes; for the role of *skepê* in Ptolemaic society, see Piatkowska (1975); cf. von Reden (2007: 228–35).
- 137 PSI XIII 1313 (II cen. BCE; Arsinoite); von Reden (2007: 228 n. 5).
- 138 Crawford (1978: 201); cf. Bitonto (1968) for the officials to whom they were addressed.

- 139 Crawford (1978: 200); Verhoogt (1998b: 54–62, esp. 61–2).
- 140 P. Tebt. I 5, lines 178–87 with editors’ note (p. 50–1): the renewal (*ananeosis*) “[n]ot improbably...refers to the presents made to the government by officials on their terms of office being renewed, for which they recouped themselves by extortions from the *georgoi*.” Cf. Crawford (1978: 201 n. 71).
- 141 P. Tebt. III.1 758 (early II cen. BCE; Arsinoite); Crawford (1978: 200).
- 142 E.g. P. Tebt. I 59 (99 BCE; Tebtunis).
- 143 Veïsse (2004b: 110).
- 144 SB XX 14708 (151 BCE; Arsinoite).
- 145 P. Tebt. I 5 (c. 118 BCE), lines 155–67; cf. also lines 22–35, 155–67, 248–51.
- 146 P. Tebt. I 24 (117 BCE; Arsinoite), lines 60–5; Préaux (1939: 531); Verhoogt (1998b: 67).
- 147 P. Tebt. III.1 703 (late III cen. BCE), lines 40–9.
- 148 P. Tebt. III.1 703 (late III cen. BCE), lines 257–80.
- 149 Veïsse (2004b: 106–7).
- 150 Wilcken (1912: 342); cf. BGU VIII 1760 (51/50 BCE; Herakleopolite), lines 29–31.
- 151 Veïsse (2004b: 110–11).
- 152 Welles (1964: 9–10); Bingen (2007 [1978a]: 166–8).
- 153 On these procedures our best sources are P. Rev. Laws (259/258 BCE; Arsinoite?) and UPZ I 112 (204 BCE; Oxyrhynchus); for discussion, see Rostovtzeff (1902: 339–43); Weber (1988 [1909]: 234); Préaux (1939: 450–9); Lewis (1986: 18–20); Muhs (2005b: 13–4); Bingen (2007 [1978a]: 165); von Reden (2007: 106–7).
- 154 See above; cf. Clarysse (2003: 22–3) and Manning (2010: 119, 136).
- 155 P. Berlin Dem. 15522 (216 or 199 BCE; Elephantine) = Zauzich (1978); English translation, Martin (1996: 313–14).
- 156 See comments to P. Tebt. I 58 (111 BCE; Alexandria) = W. Chr. 287; Rostovtzeff (1906: 207); Welles (1964: 10–15); for doubts about this interpretation, cf. Wilcken’s comments to W. Chr. 287, p. 338.
- 157 P. Eleph. Dem. 11 (236 BCE; Elephantine); reedition, P.

- Berlin Dem. 13535 + 23677 = Zauzich (1993); English translation, Martin (1996: 363–5).
- 158 Wilcken (1899: 572–87; 1912: 210–19).
- 159 Josephus, *Antiquitates Judaicae* 12.175.
- 160 Aperghis (2004: 168–9).
- 161 Joannès (2004: 222–5); Jursa (forthcoming); cf. note 52 above.
- 162 Rostovtzeff (1920: 161–78; 1941: 899–903); Dunand (1979).
- 163 Bingen (2007 [1989]: 269–73, esp. 272–3); cf. Préaux (1978: I 378–9, II 433–5).
- 164 Bingen (2007 [1989]: 272); cf. Manning (2003: 238–41).
- 165 Samuel (1989: 64–5).
- 166 Manning (2006: 263–4).
- 167 Fischer-Bovet (2008: 307–9).
- 168 Arlt (forthcoming).
- 169 BGU VI 1214 (c. 185–165 BCE; Arsinoite); P. Ryl. IV 572 (II cen.; Arsinoite); see Arlt (2008: 24–5).
- 170 See P. Tebt. I 6, lines 30–6, quoted above.
- 171 See especially the edict of Mettius Rufus quoted below, SB VI 9050 (117–127 CE; Hermopolis), col. 5–6.
- 172 Bingen (2007 [1984]); Samuel (1989: 51–65).
- 173 Cf. Samuel (1989: 62) and Bingen (2007 [1984]: 193).
- 174 For an empire-wide policy, Bowman and Rathbone (1992: 125–7); Jördens (2009: 269–71); for the relationship to property rights and low taxes, cf. Wilcken (1912: 214) and Hopkins (2009: 183–4).
- 175 Lewis (1997).
- 176 Huzar (1988: 349–59).
- 177 Kruse (2002: 52–9).
- 178 Wilcken (1912: 277–8, 292–6); Préaux (1939: 395–400); Sijpesteijn (1964: 4–7); Poethke (1969: 30–4).
- 179 Hagedorn's (2007: 196) definition of municipal offices, strictly speaking, precludes their existence before the advent of town councils in 200 CE, but he adduces several ad hoc criteria to show a gradual development (at 197–204, esp. 203 n. 2).
- 180 Oertel (1917: 2–3); Thomas (1983: 35–6).
- 181 Thomas (1983: 35–6); Jördens (2009: 267); Lewis (1993c: 122) insists that liturgies were by definition

- unpaid, while Thomas (2001: 1250) admits that those required of the poor were often paid.
- 182 Oertel (1917: 3, 32–61, especially 46, 58, 61).
- 183 Thomas (1983: 35–6); cf. Wilcken (1912: 329–30); Oertel (1917: 5).
- 184 This would clarify one of the problems identified by Thomas (2001: 1250).
- 185 Thomas (1983: 37).
- 186 Monson (2008: 184); Jördens (2009: 464–8).
- 187 Rostovtzeff (1902: 464–5).
- 188 Oertel (1917: 382–8).
- 189 Wilcken (1912: 212–14, 341); Chalon (1964: 165–70); Thomas (1983: 38); Jördens (2009: 267–71).
- 190 Wilcken (1899: 572–87; 1912: 210–19, especially 213).
- 191 Jördens (2009: 307 n. 16); *contra* Link (1993: 315), for whom their office was a liturgy.
- 192 P. Mich. X 582 (50 CE; Philadelphia); Thomas (1983: 39).
- 193 P. Oxy. XLVI 3273 (early I cen. CE; Oxyrhynchus); Thomas (1983: 38) dates it according to its handwriting and the sender's title *phorologos*, which is a high-ranking grain-supply official attested only in the first few decades of Roman rule.
- 194 See Wilcken (1912: 214, 341), Palme (1989: 29), and Jördens (2009: 269).
- 195 Rostovtzeff (1902: 465–6; 1929: 358–9); Palme (1989: 27–34); Jördens (2009: 287–92).
- 196 P. Graux 2 = Sel. Pap. II 281 = SB IV 7462 (57 CE; Arsinoite); Hanson (1988: 275–6); Jördens (2009: 305–9).
- 197 Chalon (1964: 123–36).
- 198 Jördens (2009: 302): “In the long term, however, the system proved no longer sustainable...The reason could be seen not least in the growing shortage of capital-rich tax farmers; apparently it was increasingly rare for enough *misthotai* and *telonai* to be ready to take on the corresponding tasks.”
- 199 Wilcken (1912: 341).
- 200 Palme (1989: 27–9, 178); Jördens (2009: 270–1, 287–92).
- 201 Wilcken (1912: 214–15); cf. P. Oxy. IV 708; W. Chr. 35,

41.

- ²⁰² Lewis (1997) lists all known liturgical offices and describes how the system worked in the second and third century CE.
- ²⁰³ Chalon (1964: 165–71), §9, lines 32–4.
- ²⁰⁴ P. Oxy. XLIX 3508 (70 CE; Oxyrhynchus); Hübner (1977); Thomas (1983: 39); cf. P. Giss. I 59 (119/120 CE; Apollonopolite Heptakomias), col. 3, lines 9–10, where the wealth-assessment for a dike-overseer is 17,000 drachmas.
- ²⁰⁵ SB VI 9050 (117–127 CE; Hermopolis), col. 5, lines 1–14, col. 6, lines 1–7.
- ²⁰⁶ Metzger (1945; 1974: 11–2); Kränzlein (1952: 229–37); Chalon (1964: 167); Thomas (1983: 38).
- ²⁰⁷ Cf. Kränzlein (1952: 236).
- ²⁰⁸ Cf. Ptolemaic instructions, P. Tebt. III.1 703 (late III cen. BCE), lines 257–80, quoted above.
- ²⁰⁹ P. Giss. I 58, p. 8; P. Phil. 1, pp. 29–30; Lewis (1997: 73–5); *contra* Wilcken (1899: 506; 1912: 342, cf. W. Chr. p. 467), who suggested that the *poros* was annual income.
- ²¹⁰ See comments to P. Petaus 66; Lewis (1970b: 128–30); Lewis (1997: 66–8).
- ²¹¹ For the *graphê euschemonôn* and its possible uses, see Lewis (1993b: 108–113).
- ²¹² P. Giss. I 58 (116 CE; Apollonopolite Heptakomias); the term for these administrative offices (*pragmatikoi*) is the same as in SB VI 9050 quoted above.
- ²¹³ Comments to P. Giss. I 58, p. 8–9, n. 5; their unusual wealth reflects their status as *euschemones*; cf. Lewis (1993b).
- ²¹⁴ Van Groningen (1950: 106–7).
- ²¹⁵ Cockle (1984); Burkhalter (1990).
- ²¹⁶ Van Groningen (1950: 107); the wealth assessment for the keeper of state archives falls in a lacuna in P. Giss. I 58, col. 1, lines 20–1 (cf. comments on p. 4) but must have been more than one talent; cf. Lewis (1997: 17).
- ²¹⁷ P. Fam. Tebt. 15, lines 42–75, 110–30; van Groningen (1950: 98–9, 106–7); on the separation of the *bibliothêkê enkteseôn* from the *bibliothêkê demosiôn logôn*, see Wilcken (1937: 230); Taubenschlag (1955: 167); Lippert (2008:

146).

²¹⁸ Maresch (2002: 239–45).

²¹⁹ P. Fam. Tebt. 24, lines 106–11.

²²⁰ Jördens (2009: 317–22, especially 321–2).

²²¹ Lewis (1997: 73).

²²² Lewis (1997: 69–70).

²²³ P. Phil. 1 (119 CE; Arsinoite), lines 18–34, with Scherer's comments, pp. 3–18.

²²⁴ Cf. Bingen (2007 [1984]: 203–4).

²²⁵ Hopkins (2009: 183–4).

²²⁶ Cf. Jördens (2009: 275–6 n. 44).

²²⁷ Chalon (1964: 101–9, 137–57), §3, lines 10–15, §7–8, lines 26–32; Jördens (2009: 265–6).

²²⁸ Manning (2010: 36–41, 55–72).

²²⁹ Samuel (1989: 59–60).

²³⁰ Kiser (1994: 291–5).

Part IV The politics of economic change

Chapter 7 The impact of empire

Introduction

The conclusion to be drawn from the previous chapters is that fiscal reform was a central element in the transformation of Egyptian society. Land tenure, by comparison, was a more conservative feature of the agrarian economy that was partially embedded in demographic and environmental factors. Even administrative reforms and the decline of Egyptian temples cannot be disentangled from the effects of rising land values and diminishing scope for redistributive profits from officeholding. The aim of the present chapter is to provide a political perspective on these institutional changes. The degree of political instability was closely linked to the state's demand for revenue, its ability to monitor agents, and the diffusion of status privileges.

Economic theories of the state, which tend to regard rulers as predatory, offer some insights into institutional change in Ptolemaic and Roman Egypt.¹ Olson's influential version compares rulers with bandits: roving bandits steal arbitrarily, while stationary bandits monopolize control and therefore provide the population with protection and some public goods, so that they will continue to produce revenue in the future. To remain in power, stationary bandits must share at least some of the benefits with their supporters, but unless they are properly constrained (by democratic institutions), they will violate the interests of the population in pursuit of their own ends because they are free riders on the productivity of others.² One testable implication of the theory is that rulers should extract less revenue and provide more public goods when their rule is stable than when it becomes unstable. In other words, they should become more predatory, more like roving bandits, when they can no longer count on their ability to reap the benefits of future

productivity.

This is a model that can, in principle, be falsified through historical research. Levi argues that the instability of the late Roman Republic caused ruling elites to discount future revenue and to tolerate higher levels of extortion from the provinces in order to maximize present revenue. With the establishment of the principate, Augustus had a longer-term horizon and preferred to eliminate tax farming in order to relieve the taxpayers and to generate higher future revenue.³ This helps explain variation in the tax burden, but Kiser and Kane provide a more compelling argument for the emergence and decline of tax farming itself. They attribute the system to the high costs of monitoring state agents inherent in the republican political regime, where rotating magistrates benefited from a “revolving door” and had little incentive to regulate corporations from which they might also profit.⁴ However, Kiser and Kane's model does not explain changes in the burden of taxation over time, especially the increasing rapacity of tax collectors in the late Republic.⁵

The transition from Ptolemaic to Roman Egypt provides a good experiment with which to test the effects of political regimes on fiscal institutions and economic performance. The Hellenistic kingdoms belonged to an unstable world of interstate conflict and experienced domestic unrest as they constructed the fiscal and administrative infrastructure that was necessary to be competitive. Mobilizing ever larger resources for war and the resulting social tensions were features of virtually all Mediterranean states until the establishment of the Roman principate. The dynamics were not unlike post-medieval Europe, where the rising costs and frequent incidence of war drove the process of state formation. Instead of drawing its revenue from the rulers' own patrimony and fiscal domain, European tax-states encroached on the domains of feudal lords, churches, and other economic actors.⁶ The early Roman principate, however, suggests an alternative to the centralization and revenue maximization that were characteristic of the Hellenistic path of state formation.

As rulers of a dominant world empire, which had no major external rivals, Roman emperors appear to have acted according to a set of political calculations different from those of the Ptolemies. Reducing overall revenue from Egypt is consistent with the predatory-state model because stability did increase, but the Roman provincial government exhibits other qualitative changes in fiscal and administrative institutions that this model cannot explain. The variability of rulers' demand for revenue is an important factor, perhaps even the most important one, but its relationship to other potentially significant factors has to be identified in order to develop a persuasive explanation of institutional change. One is the agency problem: how effectively could the rulers monitor officials? Another is the unequal status of different social groups: how broadly did the benefits of each regime extend?

Fiscal regimes and instability

Ptolemaic and Roman Egypt present a conveniently stark contrast for testing the model of predatory rule. However, the same theoretical framework should also apply within either of these periods. In the early third century BCE, the Ptolemaic dynasty maintained an overseas empire and enjoyed relatively peaceful conditions at home with smooth dynastic succession.⁷ The development of the Fayyum during the reigns of Ptolemy II and III seems to indicate population growth and investment in agricultural productivity. The kings granted large gift estates to influential members of the court and thereby ceded most, if not all, of their potential revenue until the recipients died or returned the land to the royal administration. During this period the Ptolemies also interfered relatively little in the affairs of the Egyptian temples, confirming or granting them independent fiscal domains and taxing them only indirectly. The regulation of tax farmers described in the Revenue Laws Papyrus and other third century BCE texts was not necessarily ineffective or exploitative. Moreover, one should not infer from cases of officials' abuse in the second and first century BCE that the administrative system was corrupt from

its very inception.⁸

Starting in the late third century BCE, the regime suffered a number of setbacks. A modestly successful campaign against the Seleucids in Syria-Palestine, culminating in the victory at Raphia in 217 BCE, was followed by a major Egyptian revolt, which may have been triggered by the demobilization of large numbers of troops. The worst crisis was the Great Revolt and secession of the Thebaid from 207 to 186 BCE, which established a rival monarchy with two successive Egyptian pharaohs associated with the temple of Amun. Its severity may stem from the high productivity and population density of the Thebaid, as argued in [Chapter 2](#). It led to the permanent erosion of Ptolemaic power in the Mediterranean, including the loss of Syria-Palestine in 200 BCE and most other overseas possessions shortly afterwards. The Seleucid king Antiochus IV conquered Egypt in 168 BCE and besieged Alexandria. He proclaimed himself pharaoh and planned a permanent occupation but was forced out by Roman threats. Further revolts broke out in the countryside around the years 165, 131–130, and 88–86 BCE. Even more destabilizing were the dynastic wars of succession in the 200s BCE, the 150s, the 130s, almost continuously from the 110s to 80s, and finally in the 50s and 40s BCE, when the Romans intervened directly. In connection with these civil disturbances were the frequent urban riots in the city of Alexandria such as those reported in the years 204, 169, 145, 131, 107, 80, 59, and 48 BCE.⁹

The fiscal and administrative policies of the later Ptolemaic rulers, from Ptolemy IV onwards, must be understood within this context of political instability. The payment of taxes on temple estates directly to the royal granaries probably began in the 220s BCE.¹⁰ The expanding domain of royal officials and the incorporation of local Egyptian elites into the administrative hierarchy and army reflect the deeper penetration of the state into Egyptian society than had been the case in the third century BCE.¹¹ Bingen's work casts doubt on the received view that concessions to the priesthood indicate an erosion of royal officials' power.¹² The monetary policy of the Ptolemies

seems to fit the same pattern, but the interpretation of the evidence remains contentious. The Ptolemaic kings introduced bronze coinage as a fiduciary currency to supplement the silver and gold coinage. The bronze coins were overvalued relative to their weight in metal, and the Ptolemaic kings periodically assigned higher values to capture revenue thus causing dramatic price fluctuations in the second and first centuries.¹³ It may also be significant that, despite the rich source material for cleruchs in the third century BCE, the earliest evidence for the direct taxation of their harvests comes only from the second century BCE.¹⁴

Another sign of the correlation between instability and fiscal predation is that the Ptolemies sought to curb fiscal abuse and granted concessions following the restoration of order. Ptolemy V's generals had recovered territory from the southern rebels as far as their capital Thebes and ruthlessly suppressed another revolt in the Delta. Partly in response to these events, a convention of priests in Memphis issued a trilingual decree in 196 BCE honoring Ptolemy for his generosity to the temples, including the abolition of the one-artaba tax on temple land, and his amnesty for rebels who returned to their land.¹⁵ In 186 BCE, one month after the news reached Alexandria that the revolt in the south had finally been crushed and order was restored, Ptolemy V issued a more general amnesty, which mentions the abuses by officials and soldiers and remits unpaid harvest taxes and rents.¹⁶

After the civil war that erupted over the dynastic struggle between Ptolemy VIII and his wife/sister Cleopatra II lasting from about 131 to 124 BCE and subsequent unrest in the following years, the reunited royal couple issued joint amnesty decrees around 118 BCE. The rulers promised a number of fiscal and administrative reforms to alleviate the pressure on the productive population.¹⁷ Among them were the typical vows to curb officials' abusive behavior and to provide landowners with relief from excessive taxation and forced lease of royal land. That the amnesties relate to the chaos during the revolts suggests that the predatory

behavior of officials and excessive taxation demands were largely a response to instability rather than its cause, though these could obviously have intensified the resistance. This type of amnesty decree was predictable according to the model. In other words, the rulers' expectation of staying in power and earning future revenue was higher after a civil war than during it, when their position was uncertain and they needed to maximize revenue despite being less able to exercise oversight over their officials.

The reign of Ptolemy XII Auletes witnessed one of the most egregious cases of fiscal predation. His kingdom had been under threat since Roman populist politicians, supported by Caesar and Crassus, had proposed in 64 BCE to annex Egypt and confiscate its royal land for Roman citizens, a plan which ultimately failed due to Cicero's persuasion and resistance from the conservative senatorial faction. The king sought protection from the threat of annexation by bribing influential Romans, but his fiscal demands on his subjects to pay for this caused unrest in Alexandria and the countryside. He then used credit from Roman moneylenders, especially Gaius Rabirius Postumus, to bribe Caesar and Pompey with 6,000 talents and to have himself recognized in Rome as an ally in 59 BCE.¹⁸ When he offered no resistance to Rome's annexation of Ptolemaic Cyprus in the following year, Alexandrians protested and drove Ptolemy XII into exile. Once again he turned to moneylenders in Rome to pay bribes until Gabinius, the commander of Roman troops in Syria, restored him to his throne in 55 BCE. To guarantee repayment, the king appointed Rabirius as Egypt's finance minister. The latter plundered Egypt ruthlessly – illustrating Olson's concept of the roving bandit – until the king finally betrayed him. Cicero later defended Rabirius in Rome against the charge that he received money in connection with Gabinius' corruption.¹⁹

When Auletes' daughter, Cleopatra VII, came to power, Egypt was probably in an economic crisis.²⁰ According to Strabo's contemporary but not entirely impartial report, the subsequent annexation and reorganization of Egypt under Augustus led to a period of prosperity.²¹ The emperor

allegedly assigned his regular troops to dig dikes and repair the broken irrigation system to restore agricultural productivity.²² During his reign, cleruchic land was recognized as private property and subject to the low fixed tax rate of one artaba per aroura. However, at some point before 32 CE the same privileged rate was extended to all private landowners in Egypt, including buyers of formerly public land.²³ The reforms' gradual implementation may have been due to resistance to the emperors' commands on the part of some local officials, who sought to relieve the increasing pressure to accept unwanted liability by continuing to collect Ptolemaic-style harvest taxes from private landowners.²⁴ The new Roman poll tax may have been slightly higher than its Ptolemaic antecedent, but land taxes seem to have decreased under Roman rule.²⁵

The theory of predatory rule, with its emphasis on the variability of rulers' demand for revenue, provides one plausible explanation for this change. An anecdote in Cassius Dio and Suetonius about the emperor Tiberius captures precisely the rationale of Olson's stationary bandit. The governor of Egypt raised considerably more tax revenue than had been expected, but Tiberius scolded him with the command: "I want my sheep sheared, not flayed."²⁶ In other words, Tiberius was willing to forego the immediate revenue of high taxes in order to enjoy the higher productivity and long-term revenues that come from low taxes. This illustrates the economic concept of discount rates that Levi uses to explain the lower tax burden during the principate.²⁷ Rostovtzeff has a more sinister interpretation of this anecdote, suggesting that it implies the ruthless exploitation of Egypt and that Tiberius would never have made the same joke about another province.²⁸ This does not square, however, with the fact that the emperor asked the prefect to *reduce* the tax burden, nor that Suetonius portrayed Tiberius addressing *all* of his provincial governors with this statement.²⁹

The extraordinary political stability in Egypt under Roman rule made possible the implementation of the new fiscal

regime.³⁰ The first prefect, Gallus, swiftly crushed an initial revolt of the Thebaid. For more than one hundred years there was not a single revolt in the Egyptian countryside. The Jewish revolt of 115–117 CE spread to the countryside, but non-Jewish Egyptian landowners and peasants took the side of Rome against them.³¹ The first major Egyptian insurrection was not until 172 CE.³² It broke out in the Delta around the time of the Antonine plague, when one of the Egyptian legions was away in Germany. It required aid from the Roman commander in Syria but allegedly fizzled due to internal disunity among the rebels.³³ It is difficult to determine the historical reality since the literary account of this so-called “revolt of the herdsmen” (*boukoloi*) was probably influenced and embellished by popular myths.³⁴ Nevertheless, Rome's ability to draw on such external forces illustrates the strength of its position in Egypt relative to the Ptolemaic dynasty, which would have been a deterrent to revolt.

Despite its explanatory value, some qualifications about the theory of predatory rule need to be added. An alternative factor that can affect state revenue is the bargaining power of particular social groups. Roman emperors sought to satisfy different segments of the population for political support than did the Ptolemaic kings. The significance of social status will be discussed later in this chapter. Kiser and Kane note that the security of Roman emperors was by no means assured, even if their tenure of the office was longer.³⁵ With a high mortality rate and fear of assassination, emperors may not have anticipated reaping as much revenue in the long run as they would have gained from exploitative, predatory taxation in the short run. If emperors had been single-mindedly intent on maximizing revenue, then one would have expected higher levels of taxation.

This points to one of the broader limitations of rational choice theory. It works well when *fungible* commodities, such as money, status, and power, are at stake. These are commodities that are interchangeable and thus satisfy a wide range of preferences, thereby furnishing more accurate

predictions of behavior across cultures or within diverse populations.³⁶ However, it is possible that once revenue – or any other commodity – satisfies the user's demands, it may begin to have negative consequences, so that one ceases to maximize it and pursues other goals instead. Rather than holding revenue maximization to be a constant characteristic of rulers, one ought to look for predictable variations within a range of survival strategies that depend on the political environment and constraints. Most Ptolemaic rulers needed to be selfish free-riders, sacrificing Egypt's prosperity in order to survive in a highly competitive field. The security of the Roman empire enabled the emperors to devise a more sustainable fiscal regime that counted partly on economic incentives to maintain the loyalty of provincial elites.

Monitoring state agents

The “Augustan threshold” is a phrase coined to describe a state's transition from imperial expansion to consolidation.³⁷ Münkler argues that successful, long-lived empires made this transition by relaxing coercive institutions orientated toward war-making and replacing them with incentives that encouraged productivity and voluntary cooperation or loyalty. For him, two aspects of the Augustan reforms were paradigmatic of imperial consolidation: the reduction of taxes and the effort to curb official corruption.³⁸ Defining corruption is notoriously tricky because it depends so much on cultural norms and perceptions.³⁹ Nevertheless, the conflicting interests between principals and agents, in this case, between rulers and their subordinates, can lead them to abuse their offices for personal gain. The large sums redistributed and political instability arguably made the costs of monitoring agents higher under the Ptolemies than in Roman Egypt.

The Ptolemies installed military governors (*strategoi*) in the various nomes, who tended, at least initially, to be of Greek or Macedonian origin. By the late third century BCE, the nome governors' judicial and civil functions superseded their military role.⁴⁰ One or more supreme governors

(*epistrategoi*), who had wide powers over multiple nomes, is attested from the time of the Great Theban Revolt in 207–186 BCE onward.⁴¹ Most of the administrative offices and institutions for agricultural production and taxation were passed down from earlier times. The Ptolemies endeavored to limit the hereditary power of scribal families by making fixed-term appointments, but the difficulty in removing them may explain the regional diversity of the administrative system. Kruse points out that the office of royal scribe was never fully systematized in the Ptolemaic period, so that the same title sometimes applied to multiple people with different tasks and types of tenure, though theoretically there was just one royal scribe of each nome.⁴² A single powerful family in Thebes controlled both the office of royal scribe and that of temple notary until the Great Theban Revolt. Then the hereditary tenure of temple notaries in Thebes disappears altogether from the sources after the later revolt of 88 BCE.⁴³ Appointment and promotion are attested much earlier for other royal offices as well as for temple notaries in other nomes.⁴⁴

Nevertheless, the Ptolemies relied too much on Egyptian elites to remove them, especially as their demand for resources intensified, and they attempted to penetrate domains controlled by temples. The loyalty and services of an Egyptian governor named Hakoris during the Great Theban Revolt earned him and his descendants extraordinary power and prestige in Middle Egypt.⁴⁵ During the late Ptolemaic period royal officials repeatedly ignored with impunity royal decrees attempting to limit their independence, and some made their positions hereditary.⁴⁶ Governors (*strategoi*) in the Thebaid were members of influential priestly families who served for long periods and perhaps paved the way for their sons to succeed them. They combined court titles with multiple prophetic and scribal offices in the temples. Some even accumulated powers and acted as governors over of several nomes simultaneously.⁴⁷

The Ptolemaic king sat at the top of the royal administration with the power to punish deviance and to confer social and economic benefits, including gift estates,

offices, and court titles. The apparent absolutism of the monarchy, however, masks the limitations of its power that stem from its reliance on self-interested agents to provide information, carry out royal commands, and enforce regulations. The costs of monitoring these agents would be especially high during periods of instability.⁴⁸ When consolidation was possible, as for example under the stronger early Ptolemies or in special regions like the Fayyum, they may have succeeded in overseeing royal officials and controlling how they were appointed. The use of tax farmers to guarantee certain revenues was an alternative way to limit the fiscal independence of royal agents.⁴⁹ However, the tendency was for families to accumulate multiple offices within their own nome. Connections like these may lie behind many of the cases of official abuse, corruption, and protection described in the previous chapter.⁵⁰

If the Ptolemies had trouble monitoring agents of the royal bureaucracy from their capital of Alexandria, then it is hard to imagine it being any easier for the emperors from Rome. The reorganization of the Egyptian administration in the time of Augustus and the eventual adoption of compulsory public services seem to have been a solution to this agency problem, a solution made possible by the regime's security. Already during the Republic there was considerable anxiety among the senatorial elite about the effects that annexing Egypt and incorporating its land into the public domain would have on internal politics.⁵¹ As Kiser and Kane argue, high agency costs were inherent in the Roman republican system, where magistrates rotated annually and provided poor oversight, making it less suitable for the development of an administrative tax hierarchy.⁵² Julius Caesar decided against annexing Egypt allegedly because he could not trust any of his colleagues to govern it on his behalf.⁵³ Mark Antony's relationship with Cleopatra, vilified in the propaganda of Caesar's heir, must have stoked fears that a Roman governor would use Egypt as a base to overthrow the government, just as Antony tried to do.

With his annexation of Egypt in 30 BCE, Octavian was

obviously aware of this problem and accordingly appointed his friend and trusted general Gaius Cornelius Gallus, an equestrian, as the prefect.⁵⁴ In 29 BCE, the first year of Gallus' prefecture, the city of Thebes revolted, just as it had done so many times in the Ptolemaic period. After ending these hostilities, Gallus erected a trilingual inscription in hieroglyphic, Latin, and Greek to commemorate his victory.⁵⁵ It took the form of the earlier royal and priestly decrees, implying that the prefect fulfilled the role traditionally reserved for the pharaoh. He was suddenly in charge of a Hellenistic royal economy and administrative hierarchy, which gave him vast powers to promote officials and redistribute wealth. The literary sources suggest that Gallus became arrogant: he "not only...set up statues of himself throughout Egypt, but he also caused a list of his achievements to be inscribed on the pyramids."⁵⁶ This pharaonic-style self-promotion presumably served to solidify support among some Egyptian elites. He may even have prepared a revolt against Rome.⁵⁷ In light of Gallus' behavior, he was recalled to Rome, tried before the senate, and forced to commit suicide in 26 BCE.⁵⁸

In his reorganization of the empire in 27 BCE, Octavian, now called Augustus, took the extraordinary step of having the senate confirm the equestrian prefect's proconsular *imperium*, a status equivalent to that of senatorial governors, enabling him to command the legions stationed in Egypt. Being of the equestrian rather than the senatorial class made the prefect more dependent on the emperor and reduced the risk that he could seize power himself. However, these precautions do not suggest that Augustus intended to make Egypt his personal fiefdom ruled by a viceroy. On the contrary, the behavior of Gallus illustrated the danger that the prefect might try to assume the role of the Ptolemaic king at the head of the Egyptian royal and temple hierarchy. Subsequent prefects were prohibited from owning property in Egypt, could be replaced at any time, normally served about three years, and took orders and needed permission from the emperor on important matters such as taxation.⁵⁹ Thus compared to a Ptolemaic king, the prefect's control over the administration and agrarian economy was relatively

limited.

Granting privileges to the temples was the traditional way for rulers based in Egypt to consolidate their power. Antony's dynastic displays as Cleopatra's consort or Gallus' Egyptianizing inscriptions give some hint as to how a renegade Roman official could have theoretically utilized traditional hierarchies and sources of power for his own ends. Roman emperors, on the other hand, might regard too close an association with Egyptian royal ideology as counterproductive for their self-image in Rome and in the empire as a whole. The third prefect Petronius (24–21 BCE) was assigned to convert most Egyptian temple estates into public or private land, which greatly reduced the temples' political and economic influence.

The reduction in land taxes must have put pressure on the prefect to clamp down on the ability of officials to profit from their service to the state, which had been another crucial pillar of support for the Ptolemaic monarchy. The prefects of Egypt faced the familiar problem of curbing the power of the governors (*strategoi*) and other high officials in the nomes. During the reign of Augustus, it was still possible for a certain Ptolemaios to succeed his father Panas as governor of the Tentyrite nome and for them to have strong ties to the Hathor temple there, holding multiple priestly and scribal offices. The son was in office by 19 or 18/17 BCE and is last attested in 10 or 6 BCE, so he held it for more than a decade.⁶⁰ His successor, Tryphon, is first attested in 1 CE and conspicuously lacks priestly titles, though he continued to erect dedicatory inscriptions with Egyptian religious associations.⁶¹ Many, though not all, nome governors in the first century CE were probably Alexandrians sent into the countryside.⁶²

The ability of elites to hold influential offices in their own nome posed a threat to Roman fiscal reforms. Governors and royal scribes, from the Augustan period onward, did not serve in their own place of residence and were prohibited from purchasing state property or being involved in money and banking business in the same nome where they held office.⁶³ As the highest official in each nome, the governor

had authority over taxation, including the ability to raise special taxes. They were probably among those responsible for the illegal continuation of Ptolemaic-style harvest taxes on private land, which had been abolished in favor of the low fixed rate of one artaba per aroura.⁶⁴ It was presumably this threat to the prefect's ability to maintain order and enforce imperial policies that prompted Tiberius Julius Alexander to decree that the tenure of the office should be limited to three years.⁶⁵ The average was slightly less than three years, but capable nome governors could be reappointed and there was considerable variation in the length of tenure.⁶⁶

The pressure to curb the ability of officials to profit from their positions extended to the villages and nome capitals, leading to the introduction of the compulsory services. The system required institutions for assessing wealth-qualifications, selecting and monitoring officials, and applying financial sanctions or coercion when necessary. Such intrusive measures worked here and not in Ptolemaic Egypt arguably because other reforms under Roman rule lowered the agency costs. The key mechanism for assessing property for compulsory service and enforcing compliance was the state-property archive, whose other function was to enhance the property rights of landowners. They had a private economic incentive to register the acquisition of land, houses, and liens on loan securities.⁶⁷ Moreover, lower taxes on land meant greater agricultural investment and increasing wealth in the hands of the landowners.

This discussion largely echoes the conclusions of the previous chapter but puts them into a wider perspective. Modern research on the causes of corruption tends to focus on four factors, which may reduce it: reducing public expenditure, regulating state agents more effectively, decentralizing the government, and enhancing market competition.⁶⁸ These four factors happen to coincide, in broad outline, with some of the consequences of Roman reforms in Egypt, though to what extent, if at all, they actually reduced corruption cannot be gauged. There was little prospect of implementing such measures during most

of Ptolemaic history, when Egypt was plagued by external and internal threats to its stability. The costs of enforcing a system of compulsory services while at the same time taxing most of the agricultural surplus would have been too great. It was a choice between squeezing the officials on whom the state depended for revenue, as the Romans did, or the productive population on which the agricultural economy depended for growth.

Status and privilege

The erection and enforcement of status distinctions in Ptolemaic and Roman Egypt further illustrate the different political calculations for rulers of a Hellenistic kingdom from those of a world empire. The Ptolemies and the Roman emperors courted different social groups to provide legitimacy and political support. To compete for power and prestige in the Hellenistic world, the Ptolemies privileged Greek immigrants, military and royal officials who collected revenue and maintained order, as well as priestly elites who helped legitimate them. For the Romans to govern Egypt according to the hierarchical authority by which the Ptolemies had ruled would not only put too much power in the hands of the prefect but also jeopardize the quasi-republican image of the Roman emperor.⁶⁹ Roman and Alexandrian citizens ranked above Egyptians in legal status, but Augustus' fiscal reforms created a broad spectrum of privileged urban residents and landowners in the nome capitals of Egypt.

In Ptolemaic Egypt, the new foundations of Alexandria and Ptolemais as well as the archaic Greek settlement of Naucratis were the only cities governed according to Greek civic and legal institutions. Each of them had an assembly, a council, and a board of magistrates as well as a division of citizens into tribes and demes just as in classical Athens.⁷⁰ Greek cities under Ptolemaic rule outside of Egypt also retained their constitutional rights.⁷¹ These ostensible constraints on royal power probably provided some assurance that the Greeks' status would be better than that

of most Egyptian subjects under Ptolemaic rule. The massive immigration of Greeks to Alexandria and Ptolemais in the first decades of Ptolemaic rule suggests that there were attractive social and economic benefits to moving there and acquiring citizenship. However, it is questionable how much real independence the city governments in Egypt exercised.⁷² From the end of the third century BCE onwards, as Egypt became less stable, Alexandrian riots were a powerful force in dynastic politics. Alexandria's city council was probably abolished during this period.⁷³

A surviving collection of Alexandrian city laws contains mostly contractual and penal regulations. It shows, for example, that Alexandrian citizens already used sophisticated legal instruments to register their property for protection by the state.⁷⁴ Its citizens were privileged relative to the inhabitants of the countryside. A royal decree from the first century BCE condemns local officials for illegally charging Alexandrian citizens the same special taxes and dues levied on the cleruchic land of military settlers.⁷⁵ Some land belonged to the city's own fiscally privileged territory, whose tax exemption was later confirmed by the Romans, but citizens could not take their privileges with them if they purchased land elsewhere in Egypt.⁷⁶ The renowned wealth of Alexandria and its vital role in Mediterranean trade reflects the patronage that it received under Ptolemaic rule.

Egyptian cities, even the nome capitals, lacked any equivalent notion of civic status and privileges for the citizen body as a whole. The population size and economic complexity of Egyptian cities, especially Memphis and Thebes, probably exceeded those of most city-states in the Greek world, so they were obviously cities in the demographic and economic sense. The term *polis* was used in the Ptolemaic administrative vocabulary for any major Egyptian urban center, including those that were not even nome capitals. The difference was that Egyptian cities had no special legal status and were administered directly by royal officials. In the cities' urban layout and social structure, temples played an important role along with other cults and religious associations.⁷⁷ Temple complexes

functioned as centers of trade, judicial activity, administration, and redistribution. Despite the existence of private land and urban markets, the political economy of Ptolemaic Egypt outside of the Greek cities tended to confer wealth and status on those in the service of the king or the temples.

The settlement of Greeks in the countryside under the Ptolemies created another privileged status group. Some scholars hold the view that Egyptian nome capitals were “mere villages” that only became true cities with the municipal reforms of Augustus in the Roman period.⁷⁸ Bingen, on the other hand, sees Greek settlers and their supposed preference for urban life and institutions as the catalyst for urbanization and municipalization in the Roman period.⁷⁹ Both views rely heavily on the misleading example of the Arsinoite metropolis of Krokodilopolis. With no more than 4,000 inhabitants during the mid-third century BCE, it indeed resembled a village, but this nome was just beginning to be reclaimed and settled, so it cannot be seen as typical of Egyptian nome capitals.⁸⁰ Cleruchic settlers appear throughout Egypt, but their concentration in this nome made it in many respects exceptional.⁸¹ From the second century BCE onward, the cavalry cleruchs (*hippeis katoikoi*) were a privileged status group that was subject to special regulations for the tenure and taxation of their land.⁸² The continuity between them and the urban elite of the Roman period was probably stronger in the Arsinoite than in other nomes.⁸³

There were undoubtedly communities of Greeks and intermarried Greco-Egyptians of varying size in every nome metropolis, who replicated certain aspects the Greek-polis environment while embracing Egyptian religious and cultural influences. Institutions such as the gymnasium and Greek religious associations appear even in the villages where cleruchs settled, but the main activity of this kind was probably in the nome capitals. Bingen has shown that soldiers who received plots of cleruchic land often chose to lease their land in the villages and to take up residence in

the nome metropolis.⁸⁴ One need not accept his explanation that “Greeks were not naturally disposed to settle in a rural environment.”⁸⁵ Egyptians of comparable wealth and status to the Greek soldier-settlers were probably just as likely to want to live in the nome capitals, where the most important temples were located and where they might enjoy better social and economic opportunities.

The poll-tax system introduced by Ptolemy II exhibits some privileges according to status.⁸⁶ Although it was called a salt tax, it was actually a tax levied in money on most adults, females being charged about half the rate of males. Even Alexandrian citizens and soldiers in the countryside seem to have been subject to the tax initially. The rate was apparently standard throughout Egypt but decreased over time from one drachma and three obols for men in 260 BCE to just four obols in the later third century BCE.⁸⁷ A letter from Apollonios, the finance minister of Ptolemy II, reports that the households of schoolteachers, athletic coaches, Dionysian artists, and athletic victors were exempt. A growing number of exemptions are attested under Ptolemy III and later kings for other groups, including doctors and Egyptian temple personnel.⁸⁸

The population was counted according to status based on one's family profession or by “ethnicity” in the case of Greeks, Persians, and Arabs. The so-called Greeks included Jews, Thracians, other immigrants as well as Egyptians who obtained the status of Greeks as a fiscal privilege.⁸⁹ They constituted about 16.5% of the civilian population in the Arsinoite nome according to tax lists. The only obvious benefit of being Greek was an almost symbolic exemption from the one-obol surcharge that all males paid in addition to the poll tax. However, being registered by any of the ethnic designations or as an Egyptian priest, rather than by one's actual profession, presumably entailed exemption from whatever professional taxes the registers were used to assess.⁹⁰ The poll tax seems to have continued to exist in the second and first centuries BCE, but the patchy sources make it impossible to trace its development.⁹¹

After the conquest of Egypt in 30 BCE, Augustus introduced

a new type of poll tax, one that privileged cities over villages and Alexandria over the rest of Egypt. The poll tax (Latin *tributum capitis*) and the land tax (Latin *tributum soli*) would serve as the two main pillars of Roman provincial taxation, so the reforms in Egypt correspond generally, if not in every detail, to an empire-wide pattern.⁹² Once again Roman fiscal policy rather than comprehensive top-down reforms seems to have been the main instrument of social and economic change. Just as land-tax reform created a new elite whose source of power was landownership, poll-tax reform engendered a notion of metropolitan citizenship that was previously lacking in Ptolemaic Egypt and probably stimulated urban growth. It was a regressive tax that benefited the wealthier urban residents, who were charged a lower rate than the poorer villagers. Roman and Alexandrian citizens as well as a limited number of Egyptian priests were altogether exempt. Unlike the Ptolemaic poll tax, only men aged fourteen to sixty-two, including slaves, were liable, and the rates themselves varied from nome to nome.⁹³ A census conducted every fourteen years was used to draw up lists for the collection of the poll tax.⁹⁴

Determining the composition of the group that paid the reduced rate is complicated by the fact that there were two distinct but similar statuses: metropolitan residents and members of the gymnasium. The latter was the more exclusive category, but the fiscal privilege was ostensibly the same.⁹⁵ In other nomes the members were called “those from the gymnasium” (*hoi ek tou gymnasiou*), but in the Arsinoite nome they were called the settlers (*katoikoi*), a reference to their alleged descent from the Ptolemaic cavalry settlers. Bowman and Rathbone suggest that members of this group who were old enough to hold offices constituted a kind of proto-council for deliberating and awarding honors. The best evidence for this is the delegation sent by the Arsinoite group to the emperor Nero to deliver a gold crown on their behalf.⁹⁶ Nero's response, commemorated in an inscription, refers to them as “the 6,475 Greek men of the Arsinoite nome.”⁹⁷ The episode vividly demonstrates the relationship between the new Roman status privileges in Egypt and the imperial ideology that the emperors cultivated

in their provincial subjects.

The metropolitan residents and the gymnasial group were not only entitled to the same reduced rate of the poll tax, but they also made similar declarations to obtain their status.⁹⁸ One difference was that gymnasial declarations were made only for freeborn males, while metropolitan declarations were also made on behalf of women and slaves. In both cases, however, parents, guardians, or slave-owners submitted a status declaration for the child at age thirteen or fourteen, shortly before he or she became liable for the poll tax. In declarations for metropolitan status, the ones making the declarations had to confirm that they themselves were already registered as metropolitan residents and in which quarter of the city. It usually sufficed for them to support their claim by citing a previous census.⁹⁹ The oldest surviving metropolitan declarations are from the later first century CE, but an Arsinoite text mentioning the status in 6 CE implies that it had already been established by then.¹⁰⁰

Besides being restricted to free males, declarations for gymnasial status required more rigorous supporting evidence. The declarants typically traced back their ancestry on both the father's and mother's side to an original census of the gymnasium in 4/5 CE or to the year 73/74 CE, when the lists were revised. Completeness on the father's side was most important.¹⁰¹ An undated text from the first century CE explicitly states that both metropolitan and gymnasial status required both parents to have that status already. Gymnasial status also required that the candidate be "of that class" (*apo autou tou tagmatos*), which presumably refers to the stringent genealogical criteria.¹⁰²

The question arises, why have two different statuses for exactly the same fiscal privilege? It is likely that gymnasial status entailed unofficial social benefits and prestige, making it worthwhile even if it was only complementary to metropolitan status. However, if the fiscal privilege had only been extended to metropolitan residents, then Greek or Greco-Egyptian gymnasial elites whose place of residence was a village would have been excluded and thus subject to the higher poll-tax rate on villagers. There were still

gymnasiums located in the villages for the first few decades of Roman rule.¹⁰³ This could explain why the group that sent its delegates to Nero called itself “the 6,475 Greek men of the Arsinoite nome” and not just of its capital city Arsinoe, even though many of them probably lived there.¹⁰⁴ The census of the gymnasial group taken 4/5 CE, to which all later members could ideally trace their lineage, would have been needed to determine which villagers qualified. By the late first century CE, the gymnasium was located exclusively in the nome capitals, where it was a center for Greek culture, but one that served a large and diverse Greco-Egyptian membership.

Being associated with a gymnasium was probably more prestigious than mere residence in the metropolis at the time of the Augustan reforms. One papyrus contains two declarations of a single child, one for metropolitan and one for gymnasial status, which shows that they were not identical.¹⁰⁵ Only the members could perform gymnasial functions such as master of the gymnasium (*gymnasiarchos*) and caretaker of the ephebes (*kosmetês*), whose titles ex-officio holders flaunted as a sign of their wealth and euergetism. These officials also came to exercise state functions by the second century CE, and it may have been members of the gymnasial group who were recruited for other magistracies.¹⁰⁶

An Augustan creation, the gymnasial group is sometimes interpreted in modern scholarship as a form of discrimination against Egyptians and Egyptian culture.¹⁰⁷ Even if they identified themselves as Greeks in the Arsinoite nome, the members of the gymnasial group had the same legal status as other Egyptians and for the most part worshipped the same Egyptian gods thinly disguised with Greek names and attributes. Already in the late Ptolemaic period, the army and cleruchic system served as an engine of social integration: many officers and settlers had double names, made dedications to Egyptian temples, and even held priestly offices.¹⁰⁸ In the Roman period, most members of the gymnasial group openly used an Egyptian name or a Greco-Egyptian name that was Greek in form but with

Egyptian religious or dynastic connotations. Less than 20% were regular Greek names.¹⁰⁹ Egyptian names among the Hermopolite and Oxyrhynchite gymnasial members were even more common than in the Arsinoite nome.¹¹⁰ Wealthy Arsinoites still mummified their dead in the Egyptian style, whereby the mummies were often elaborated with expensive, lifelike Hellenistic portraits embedded into the casing.¹¹¹ Even in Alexandria, the stunning Greco-Egyptian tombs such as those at Kom el-Shuqafa, which only the rich could have afforded, belie the notion that urban elites distanced themselves from Egyptian religion and culture.¹¹²

As Ruffini has recently shown, the large size of the gymnasial group implies a high degree of social and economic diversity.¹¹³ Nero's reply to the "6,475 Greek men of the Arsinoite nome" indicates the notional size of the group, which may roughly approximate its actual membership.¹¹⁴ A papyrus from Oxyrhynchus allows one to estimate the number of people with gymnasial status in that nome. It suggests that no less than 121 children aged thirteen or fourteen applied for the status in a single year, which suggests a total of roughly 4,000 adult male members.¹¹⁵ Given that the Arsinoite was a much larger nome, these two figures are comparable. If all members were urban residents, they and their families may have constituted 45% or more of the total population of Arsinoe and 40% of Oxyrhynchus.¹¹⁶

Thus, rather than being a narrow Greek elite chosen by Augustus to rule over the Egyptians, the gymnasial group of each nome comprised a broad spectrum of society, comparable to the citizen body of a Greek city-state. Children of gymnasial members were enrolled in the ephebate at the age of fourteen.¹¹⁷ The ephebate was an association of boys entering the gymnasium. They would have participated in athletic activities, community-building, and perhaps some basic intellectual exercises.¹¹⁸ In the cities of Asia Minor, the gymnasial group was likewise a diverse and stratified cross-section of society rather than a narrow elite. The number of new ephebes in some of these cities suggests a similarly high percentage of gymnasial

members among the urban population.¹¹⁹ While the gymnasium in Egypt may have been a Hellenizing force, the size of the group fits with what has been said about its ethnic and cultural diversity as well as its socioeconomic diversity. There was even a grain dole for members of the gymnasium in Hermopolis.¹²⁰ Even if not all of the recipients were poor, this suggests that gymnasial status was no guarantee that one belonged to the economic elite.

Both gymnasial and metropolitan status were hereditary rights that constituted membership in a privileged community. Higher urban mortality may have generated a net influx of peasants from the countryside, especially if the cities were also growing in size, making the status increasingly exclusive unless there were other ways to gain access.¹²¹ Gymnasial families were demographically resilient, lasting for centuries despite their supposed descent from an original census group in the reign of Augustus.¹²² The need to update the census of the gymnasial group in 73/74 CE implies that some entered after the original census. Van Minnen argues that the rules were looser before that date, noting that some declarations trace only the father's genealogy and that the mother of one ephebe was apparently not of gymnasial parentage.¹²³ Metropolitan status was probably even less tightly controlled.¹²⁴

New members may also have entered the gymnasial and metropolitan groups by means of adoption. Later adoption contracts emphasize that the child became a “genuine son” (*gnesios hyios*), “as if he were engendered by you from your own blood.”¹²⁵ Declarations for metropolitan or gymnasial status occasionally include an oath stating that the child was the “genuine son” of the parents.¹²⁶ If the legal status of adopted children was the same in the early Roman period, when no such contracts are attested, it would presumably entitle the child to list his adoptive parents’ genealogy as his own and qualify even for the more restrictive gymnasial status.¹²⁷

The Augustan poll-tax system and the accompanying status declarations created a sense of metropolitan identity in the

nome capitals. Bowman and Rathbone argue that this was an important step in the formation of political communities that later obtained city councils in 200 CE.¹²⁸ It was at best only a fiscal citizenship, not entailing any special legal rights or municipal autonomy. Augustus extended metropolitan status to virtually all urban residents – men, women, and slaves – at the time the poll tax was introduced. They obtained the same fiscal privilege as the gymnasial group, composed of Greeks and Hellenized Egyptians in the cities and village settlements. Egyptian priests possessed a similarly privileged status in the Roman period for which they too submitted status declarations. However, they had to pay annual dues, and state officials – rather than the priests themselves – determined eligibility for this status. Thus the temples lacked the same degree of autonomy that they enjoyed under the Ptolemaic regime.¹²⁹

From a legal perspective, the status distinctions that mattered most were the three mentioned in the regulations of the *Gnomon of the Idios Logos*: Roman citizens, Alexandrian citizens, and Egyptians. As the second largest Mediterranean city after Rome, Alexandria stood above and apart from the rest of Egyptian society, exempt from the poll taxes and from land taxes on its own city land. However, Alexandria was prohibited from having a city council, despite its petitions to Augustus and later emperors, perhaps because of the role it played in disturbances during the Ptolemaic period.¹³⁰ The citizens of the other Greek cities in Egypt, Naucratis and Ptolemais, continued to enjoy the municipal autonomy that they had in the Ptolemaic period.¹³¹ Moreover, in 130 CE the emperor Hadrian founded another Greek city, named Antinoopolis, in Middle Egypt, giving its citizens a constitution and privileges such as the exemption from the poll tax and from compulsory services outside of their own city.¹³²

The poll tax of Augustus created an inequality of status between the urban gymnasial and metropolitan groups on the one hand and the Egyptian villagers on the other. In view of the size of these urban groups, there were bound to be huge social and economic disparities among them, so one

cannot assume that the villagers were always worse off. The emergence of a new economic elite for whom private property was the main source of wealth and power corresponded with the decline of the old Ptolemaic elites who derived their power from royal and temple offices or military service. From an Egyptian point of view, the impact of Roman rule was to undermine the hierarchical power structures of the former Hellenistic kingdom and to empower a larger and more dispersed network of urban elites.

An explanation for the wider diffusion of status, which anticipated the administrative decentralization described above, must be sought in the political economy of the Ptolemaic and Roman regimes. The political logic seems to be that rulers in a strong position, free from the short-term constraints of wealth maximization, would want to expand their political base outward and rely less on their original supporters, who expected benefits. This is one of the predictions of the selectorate theory in political science developed by Bueno de Mesquita and his collaborators. The theory entails complex variables, which they use to test a formal model of historical and contemporary political processes. Rulers maximize their political survival by making sure that the winning coalition that supports them is small relative to the whole set of politically influential groups, which they term the selectorate. The smaller it is, the more rulers can rely on private payoffs instead of public goods, which aid even their potential detractors.¹³³

Using this approach to compare Ptolemaic and Roman Egypt would require an analysis of the whole Roman empire, which is beyond the scope of this book. In short, Rome's transition from the late Republic to the principate was marked by the extension of privileged status, low taxes, and protection that enriched and empowered provincial urban elites. These rewards and benefactions to their subjects may have helped the emperors gain more independence from the Roman citizens and senators that initially ensured their legitimacy and security.¹³⁴ Privileges for a narrow military, administrative, and priestly elite in

Ptolemaic Egypt suggest different political constraints at work. The Ptolemies needed to win the loyalty of ever more supporters from an ever-smaller range of influential groups at the expense of their excluded and powerless subjects in order to maintain their fragile regime. Whether or not the selectorate theory is sufficient to explain these differences, it could help historians think further about how fiscal and social privileges reflect the relationships that hold political regimes together.

Conclusion

The transition from Ptolemaic to Roman Egypt cannot be explained in isolation nor dismissed, as Egypt often is, as a unique case. A broader comparative study would be required to test whether the theoretical argument advanced here can stand up under further scrutiny. An examination of other Hellenistic states and of imperial policies throughout the Roman principate would be needed to determine whether Egyptian fiscal and administrative reforms were unique. The contemporary transition in China from the Warring States to the Han Empire furnishes an independent case for comparison. The former was characterized by incessant war with massive armies, the development of coercive, redistributive bureaucracy, and the internal resistance of local aristocracies. Just as in the Roman principate, the Han Empire brought about a reduction in taxes, decentralization, and a resurgence of provincial landowning elites.¹³⁵

These are sweeping claims that go beyond the scope of this book, but they help to contextualize the study of political and economic change in Egypt. The correlation between instability and fiscal institutions in Ptolemaic and Roman Egypt lends some support to Levi's model of predatory rule. Rulers with short time-horizons, who are unsure whether they will ever reap the gains of their investment, tend to maximize current revenue. This explains broad contrasts between the Hellenistic and Roman imperial regimes and even changes between the earlier and later period of Ptolemaic history. Nevertheless, the revenue maximization

hypothesis is not universally valid because revenue is not an entirely fungible commodity; in other words, it cannot be readily exchanged for the things that rulers actually demand. Caring too much about one's revenue intake could undermine the loyalty and legitimacy that rulers need from their agents and subjects. One must take into consideration the political structures that constrain rulers' power as well as the differences in bargaining strength that enable some groups to gain special status and fiscal privileges.

From the beginning of the Hellenistic period, the challenge for the Ptolemies was to forge hierarchical structures within Egypt that would enable them to mobilize resources for competition with rival states. To the extent that they were successful in securing their empire and dynastic succession, they could afford to invest in future productivity and to provide social benefits that promoted voluntary compliance. From the third century BCE onward, the dynasty came under increasing external and internal pressure. This compelled them to develop a more intrusive fiscal bureaucracy and to vest greater coercive powers in their own agents, which generated diminishing returns of net revenue, reduced the incentives for production, and provoked further internal unrest. The Ptolemies' vicious cycle of external pressure, fiscal penetration, and internal tension could only have been halted with total military victory and the establishment of a stable empire. The Roman Republic differed from the Hellenistic kingdoms because its military success created a positive-feedback cycle, allowing the state to use cooperation incentives rather than coercive redistribution to mobilize resources.¹³⁶

The Roman conquest of the Hellenistic kingdoms illustrates the transition from the logic of warring states to that of a world empire. What has been called the Augustan threshold entailed an overall reduction in the tax burden, the strengthening of property rights, better control over state agents, and the shift of government responsibility onto urban elites. This was in line with the ideology of the Roman emperor as paternal benefactor and guarantor of republican values, but it also helped establish a broader foundation for

imperial rule based on the more or less voluntary cooperation of his provincial elites. The concluding chapter turns to how these political conditions and institutional reforms in the Roman period affected economic performance. By enhancing the incentives for agricultural production and market exchange, the empire can be seen to have promoted economic growth and the gradual emergence of a new Egyptian aristocracy based on landownership.

- ¹ North (1981: 20–32); Levi (1981; 1988: 10–40); Bates (2001); Barzel (2002: 1–9); Bueno de Mesquita et al. (2003: 3–36); North et al. (2009: 30–74).
- ² Olson (1993; 2000).
- ³ Levi (1988: 74, 93).
- ⁴ Kiser and Kane (2007: 199); cf. Weber (1988 [1909]: 63) and Kiser (1994: 289–91).
- ⁵ Kiser and Kane (2007: 199–204).
- ⁶ Schumpeter (1991 [1918]: 102–8); Tilly (1992); Bonney (1999); Bonney and Omrod (1999).
- ⁷ Successes like Ptolemy III's in the Third Syrian War could, however, be offset by destabilizing tensions, such as the obscure intrigue or revolt in Egypt during his absence; McGing (1997: 274–7).
- ⁸ P. Rev. Laws (259/258 BCE; Arsinoite?); UPZ I 112 (204 BCE; Oxyrhynchus); cf. Samuel (1989: 54).
- ⁹ Historical overview: Hölbl (2001); Huss (2001); Egyptian revolts: Peremans (1978); McGing (1997); Veïsse (2004a); cf. Clarysse (1979b: 103–4) for the disruption of agriculture in the Great Theban Revolt; for an analysis of the rioting of the Alexandrians, see Barry (1993).
- ¹⁰ Vondorp (2006: 168–9).
- ¹¹ Manning (2003: 230–4, 239; 2006: 263–4); Arlt (forthcoming).
- ¹² Bingen (2007 [1989] 269–72); cf. Rostovtzeff (1920: 161–78; 1941: 899–903).
- ¹³ Reekmans (1951); Maresch (1996); Cadell and Le Rider (1997); Bagnall (1999).
- ¹⁴ See Chapter 5, pp. 176–84.
- ¹⁵ OGIS I 90 = SB V 8299; hieroglyphic and Demotic versions, Spiegelberg (1922); trans. Austin (2006: 491–

- 6); cf. McGing (1997: 287).
- 16 P. Köln VII 313 = C. Ord. Ptol. 34 (186 BCE; Oxyrhynchus?); McGing (1997: 288–9).
 - 17 P. Tebt. I 5 = C. Ord. Ptol. 53 (c. 118 BCE; Kerkeosiris, Arsinoite); trans. Austin (2006: 501–8).
 - 18 Huss (2001: 680–4); Strabo 18.1.13 gives Ptolemy XII's total money revenue as 12,500 talents per year – similar to the 14,800 talents reported by Jerome (on Daniel 11.5) – while Diodorus 17.52.6, who visited Egypt in early 50s BCE, claims 6,000 talents of annual revenue for Ptolemy XII; for discussion, see Wilcken (1899: 413–16).
 - 19 Cicero, *Pro Rabirio Postumo*; Huss (2001: 684–95).
 - 20 Thompson (2003: 31–3) but cf. Maehler (1983).
 - 21 Strabo 17.1.3; Jördens (2009: 401 n. 9); cf. Rostovtzeff (1929: 346); for Strabo's favorable attitude towards the Roman empire, the influence of Augustan propaganda on his work, and his view of Roman Egypt in particular, see Engels (1999: 298–313, 337–46, especially 346).
 - 22 Suetonius, *Divus Augustus* 18.2; Cassius Dio 51.18.1; Jördens (2009: 401–2).
 - 23 See Chapter 5, pp. 184–91.
 - 24 Jördens (2009: 275–6 n. 44).
 - 25 For the poll tax, see below; if one accepts Strabo's (18.1.13) report of Ptolemy XII's annual revenue of 12,500 talents, then an overall reduction in the tax burden with the onset of Roman rule is likely, because this figure is too high to reconcile with estimates for Roman imperial revenue during the principate; cf. Duncan-Jones (1994: 46) and Hopkins (2009: 183).
 - 26 Cassius Dio 57.10.
 - 27 Levi (1988: 92–3).
 - 28 Rostovtzeff (1929: 343); cf. Sharp (1999a: 213).
 - 29 Suetonius, *Tiberius* 32.
 - 30 Noreña (2010: 533–4, 538–9) similarly highlights stability as the basis for political and economic development in the early Principate.
 - 31 Fuks (1953: 141–9).
 - 32 Lewis (1983: 196–207).
 - 33 Cassius Dio 72.4; Lewis (1983: 205).
 - 34 Alston (1999).

- 35 Kiser and Kane (2007: 198–9).
- 36 Kiser and Hechter (1998: 801–2).
- 37 Doyle (1986: 93–7); Münkler (2007: 70–9).
- 38 Münkler (2007: 70–3).
- 39 For modern attempts to define and measure corruption, see Lambsdorff (2007: 15–26); some Ptolemaic historians are too relativist about calling abuse corruption, e.g. Samuel (1993: 172–3).
- 40 Bengtson (1952: 24–87) is still the standard work on the development of this office.
- 41 During the Roman period, Egypt was divided into three zones, each under one *epistrategos*, but there may have been only one in Ptolemaic Egypt: Thomas (1975: 9–86, esp. 16–8).
- 42 Kruse (2002: 11–22, esp. 12–18).
- 43 Arlt (forthcoming).
- 44 See Chapter 6, pp. 227–36.
- 45 Clarysse (1991: 239–43).
- 46 Préaux (1939: 523–33); cf. P. Tebt. I 24 (117 BCE; Arsinoite), lines 60–9.
- 47 Bengtson (1952: 87–91); De Meulenaere (1959); Thomas (1975: 32–3, 45); cf. Jördens (2009: 138).
- 48 Cf. Préaux (1939: 518).
- 49 See Chapter 6, pp. 233–4.
- 50 E.g. P. Tebt. I 24 (117 BCE; Arsinoite), lines 60–9.
- 51 Cicero, *De lege agraria*; Plutarch, *Crassus* 13.2; Huss (2001: 680).
- 52 Kiser and Kane (2007: 195–8).
- 53 Suetonius, *Divus Iulius* 35.
- 54 On Gallus, see Syme (1938); Boucher (1966); Stickler (2002); Hoffmann et al. (2009: 5–10).
- 55 CIL 14147; ILS 8995; Boucher (1966); new edition of all three versions, Hoffmann et al. (2009).
- 56 Cassius Dio 51.9, 52.3, 51.17, 53.23.5; Strabo, 17.1.53.
- 57 This depends on the interpretation of the historical literary fragment P. Oxy. XXXVII 2820: Stickler (2002) sees here Gallus' preparation for a revolt against Octavian; cf. Jördens (2009: 50–1) and Hoffmann et al. (2009: 134–6); *contra* Goukowsky (1995) and Huss (2001: 657–9), who place the narrative in the context of

Ptolemy X.

- 58 Cassius Dio 53.23.5; Suetonius, *Divus Augustus* 66.
- 59 Stein (1950: 186–7); Brunt (1975: 126–7); Eich (2007: 381–3); Haensch (2008: 83); Jördens (2009: 46–53, 513).
- 60 De Meulenaere (1959).
- 61 De Meulenaere (1959: 10); ST 170–3 = Vleeming (2001); Bowman and Rathbone (1992: 107–8).
- 62 This can be deduced from the attainment of Roman citizenship implied in the *nomina* of many nome governors: Whitehorne (2006: 12–13, 31–3, 35–6, 59, 64–5, 76, 84–5, 89–94); Alexandrian citizenship was allegedly a requisite for Roman citizenship: Pliny, *Epistulae* 10.5 with Delia (1991: 39–45); cf. Bowman and Rathbone (1992: 125), who suggests it was an Alexandrian liturgy; Kruse (2002: 46); Haensch (2008: 87).
- 63 BGU V 1210, §70, lines 174–80; As a rule nome governors did not serve in their own nome from the time of Augustus onward: Tait (1922: 171); Whitehorne (1988: 601); but Kruse (2002: 44–6) notes two exceptions as late as 33 CE and suggests that the rules may have been introduced later.
- 64 Cf. Jördens (2009: 275–6 n. 44).
- 65 Jördens (2009: 137–8).
- 66 Whitehorne (1981: 422–5; 1988: 601).
- 67 Maresch (2002: 239–45), see Chapter 6, pp. 127–30.
- 68 Lambsdorff (2007: 1–15) reviews the literature for each of these factors, whose effects on corruption are in some cases ambiguous or insufficiently tested.
- 69 Jördens (2009: 53–7, esp. 55).
- 70 Wilcken (1912: 12–19); Jouguet (1911: 4–44, 123–9); Jones (1971: 301–6); Jördens (1999: 145); Alexandria: Delia (1991); Fraser (1972: I 93–101, n. 3); Naucratis: Scholl (1997); Ptolemais: Plaumann (1910).
- 71 Bagnall (1976: 235–8).
- 72 Jördens (1999: 144–6).
- 73 Bowman and Rathbone (1992: 114).
- 74 P. Hal. 1 (after 259 BCE; Apollonopolite); Jähne (1981: 100); Yiftach-Firanko (forthcoming).
- 75 C. Ord. Ptol. 75–76 (41 BCE; Herakleopolite); Bingen

- (2007 [1995]: 141–50); see [Chapter 5](#), pp. 182–3.
- 76 Wilcken (1912: 286, 308); Jähne (1981: 103); Bingen (2007 [1995]: 141–50); cf. Jördens (2009: 333–4).
- 77 For Egyptian cities, see Thompson (1988: 3–31); Alston (2002: 196–212); for private associations connected with the temple economy in Upper Egypt, ST 165–8, 170–4 for the Dendara temple, and ST 60–1 = Vleeming (2001) as well as Schentuleit (2008: 187–8) for the Edfu temple.
- 78 Jouguet (1911: 47); Braunert (1964: 82–98, especially 83); cf. Bingen (2007 [1975]: 116–19) and Jördens (1999: 141–5, esp. 145).
- 79 Bingen (2007 [1973]: 113; 2007 [1979]).
- 80 For the population figure, see Clarysse and Thompson (2006: 100), whose extrapolation to all nome capitals is implausible for reasons explained in [Chapter 2](#).
- 81 Thompson (2007).
- 82 E.g., P. Lips. II 124 (c. 137 BCE; Herakleopolite or Arsinoite) is a petition from this group collectively regarding their tax burden; see the discussion in [Chapter 5](#), pp. 179–82.
- 83 Hence the designation of the gymnasial group (see below) as *katoikoi* in the Arsinoite nome.
- 84 Bingen (2007 [1975]: 119–21; 2007 [1978b]: 206–212; 2007 [1979]: 125–31; 2007 [1983]: 133).
- 85 Bingen (2007 [1979]: 125); the majority of Greeks of the classical period probably lived in “cities” that were no larger than many Egyptian villages; Hansen (2006: 24–5, 29–30). At 1,000–6,000 inhabitants, the latter would qualify as cities by most ancient historians’ definition; Rathbone (1990: 123, 134), cf. Hansen (2006: 73–5).
- 86 Muhs (2005b: 41–51); Clarysse and Thompson (2006: 39–59).
- 87 Clarysse and Thompson (2006: 44–5).
- 88 Clarysse and Thompson (2006: 52–9).
- 89 Clarysse and Thompson (2006: 145).
- 90 Clarysse and Thompson (2006: 56–9, 138–47),
- 91 P. Count 49–54 (second century BCE); BGU XIV 2429 (c. 96–94 or 63–61 BCE; Herakleopolite); Rathbone (1993: 90–93); Clarysse and Thompson (2006: 45, 58).
- 92 Rathbone (1993: 81–99, 111).

- ⁹³ Rathbone (1993: 87, 89); for the exemption of priests, Otto (1905: 37; 1908: 62–3); Kruse (2002: 709).
- ⁹⁴ Bagnall and Frier (1994: 1–30).
- ⁹⁵ Kenyon in his comments on P. Lond. II 260, pp. 43–4 as well as Grenfell and Hunt on P. Oxy. II 257, pp. 218, 220–21, argued that *katoikoi* (i.e. members of the gymnasial group) were entirely exempt from the poll tax, but other texts suggest that they merely paid the same reduced rate as the metropolites; see, e.g., P. Lond. III 955 (261 CE; Hermopolis) with Wilcken (1908: 546; 1912: 189); Bowman and Rathbone (1992: 120–5); van Minnen (2002: 338, 340); Capponi (2005: 92–3).
- ⁹⁶ Bowman and Rathbone (1992: 124).
- ⁹⁷ SB XII 11012 (55 CE; Fayyum) and I. Fay. III 147; Montevecchi (1970); Canducci (1990; 1991).
- ⁹⁸ Wilcken (1912: 189, 196–202).
- ⁹⁹ Nelson (1979: 10–39).
- ¹⁰⁰ SB XXIV 15909; Hanson (1997: 420).
- ¹⁰¹ Nelson (1979: 26–39); Ruffini (2006: 75–7).
- ¹⁰² SB V 8038 (I cen. CE; Hermopolis); van Minnen (2002: 344).
- ¹⁰³ BGU IV 1188 (15/14 CE; Koma, Herakleopolite), line 2; BGU IV 1189 (1 BCE/1 CE; Busiris, Herakleopolite), lines 2–3; BGU IV 1201 (2 CE; Busiris, Herakleopolite), line 13; P. Lond. II 354 (7–4 BCE; Soknopaiou Nesos, Arsinoite), lines 18–19 with Hagedorn (2007: 201); cf. Legras (1999: 239) and Habermann (2007: 348).
- ¹⁰⁴ SB XII 11012 (55 CE; Arsinoite); I. Fay. III 147; Bowman and Rathbone (1992: 124).
- ¹⁰⁵ P. Oxy XII 1452 (127/128 CE; Oxyrhynchus).
- ¹⁰⁶ Jouguet (1911: 279, 292–303, 309–14, 318–24), Bowman and Rathbone (1992: 121–5); Husson and Valbelle (1992: 235–6, 243–5).
- ¹⁰⁷ Shaw (1992: 284–92).
- ¹⁰⁸ Fischer-Bovet (2008: 335–69; forthcoming).
- ¹⁰⁹ Bagnall (1997: 9–10).
- ¹¹⁰ Ruffini (2006: 75 n. 14); similarly, van Minnen (2002: 337–9).
- ¹¹¹ Walker (2000); Bagnall (1997); Riggs (2005: 14–26, 204–5).

- 112 Empereur (1998: 155–74); Bagnall and Rathbone (2004: 69–73); Riggs (2005: 11–12).
- 113 Ruffini (2006).
- 114 See above, note 104.
- 115 P. Oxy XLVI 3276–3284; Lewis (1983: 42–3); Ruffini (2006: 78–9).
- 116 Arsinoe, 44,000 or less, and Oxyrhynchus, 20,000–42,000, are high population estimates, but smaller ones would imply an even higher rate of membership in the gymnasium; Tacoma (2006: 41–3, 54); cf. Rathbone (1990: 119–22); Bagnall and Frier (1994: 53–6); Alston and Alston (1997: 201); Clarysse and Thompson (2006: 100).
- 117 Nelson (1979: 47–9); Legras (1999: 252–3).
- 118 Legras (1999: 237–51); Hin (2007: 154–65).
- 119 Hin (2007: 152–3).
- 120 P. Heid. IV 338–40 (c. 61–63 CE, Hermopolis); cf. Sharp (2007: 223–30) for the grain dole in third-century CE Oxyrhynchus.
- 121 Scheidel (2001: 160–2).
- 122 Ruffini (2006: 80); Shaw (1992: 292).
- 123 E.g., P. Flor. I 79 (60 CE, Hermopolis); Nelson (1979: viii, 49); van Minnen (2002: 345–6) interprets this rather as an indication that rules still permitted children to enter the gymnasial group on the basis of just their father's status.
- 124 Van Minnen (2002: 344).
- 125 P. Lips I 28 = M. Chr. 363 (381 CE, Hermopolis), lines 15–16: σοῦ υἱὸν γνήσιον καὶ πρωτότοκον ὡς ἐξ ἰδίου αἵματος; cf. P. Oxy IX 1209 (335 CE, Oxyrhynchus); Huebner (2007: 34–5).
- 126 Nelson (1979: 48).
- 127 Huebner (2007) argues that brother-sister marriages were with adopted sons, but many were probably incestuous; cf. Remijsen and Clarysse (2008) and Rowlandson and Takahashi (2009).
- 128 Bowman and Rathbone (1992: 120–7); Rathbone (1993: 86); for skepticism, see Habermann (2007: 348); Haensch (2008: 86–7); Sängner (2010: 105–6).
- 129 See Chapter 6, pp. 212–27.

- ¹³⁰ Delia (1991: 30–4); Bowman and Rathbone (1992: 115–19); Jördens (1999: 148–56; 2009: 331–4).
- ¹³¹ Husson and Valbelle (1992: 223–5); Jördens (1999: 156–64).
- ¹³² Jouguet (1911: 116–17); Bell (1940); Husson and Valbelle (1992: 225–6); Jördens (1999: 158–64; 2009: 334–8).
- ¹³³ Bueno de Mesquita et al. (2003: 37–76).
- ¹³⁴ Jördens (2009: 521–3); cf. Doyle (1986: 95–6).
- ¹³⁵ Lewis (2007: 21–7, 30–50).
- ¹³⁶ Monson (forthcoming b).

Chapter 8 Conclusion

Economic development

Egypt's transition from Ptolemaic to Roman rule enables one to see the impact of different political regimes on economic performance. The purpose of this section is to review the evidence for innovation and growth in the agrarian economy of both periods before concluding in the next section with a final evaluation of institutional continuity and change. For those who regard Egypt as an exceptional province, whose institutions were designed to maximize Roman's grain supply, it supposedly missed out on the benefits enjoyed by cities and landowning elites elsewhere in the empire.¹ After some decades in which ancient economic historians focused on social structures that constrained development, the topic of economic growth in the Roman empire has recently resurfaced. The debate now turns on whether there was aggregate or per capita growth.² Historians who dispute the notion of Egypt's exceptionality and exploitation increasingly argue that Roman rule brought greater economic prosperity to Egypt as well.³

Agricultural production in Ptolemaic and Roman Egypt illustrates the dynamics between institutional reform and socioeconomic forces. The state was not only responsible for setting tax rates, monitoring agents, and conferring status privileges but also for specifying land rights and providing assistance for those who invested their capital or labor in agricultural production. In the long run, geography and demography constitute robust constraints that may explain the historical and regional patterns in Egyptian land tenure. This perspective at least provides a corrective to the idea that private landownership was introduced under Roman rule, which still prevails in the secondary literature. However, different incentives for agricultural production

could artificially affect the land-labor ratio by making land more or less valuable and could even impact the natural environment by improving or degrading the soil.

Economic growth in Roman Egypt implies a lower level of productivity under Ptolemaic rule. Recent scholarship, however, tends to take a relatively positive view of economic development in the Ptolemaic period. Manning suggests that it was marked by increasing urbanization, long-distance trade, monetization, intensified agricultural production, and aggregate economic growth. These vague claims are rather impressionistic and mean little without reference to other periods or places but, as he points out, even less is known about Achaemenid Persian Egypt.⁴ One could do better by evaluating Ptolemaic economic development in relation to the Roman period. Strong Ptolemaic kings such as Ptolemy II, who successfully managed external and internal pressures, may have been able to balance revenue extraction with protection and incentives for economic production. On the other hand, the tensions of the Hellenistic period generally drove rulers to adopt less legal protection and more intrusive fiscal institutions than the early Roman emperors.

One of the more positive effects of interstate competition in the Hellenistic period may have been the state sponsorship of scientific and technological innovation. The early Ptolemies supported scholars in Alexandria and even experimented with ideas that could enhance agricultural productivity.⁵ However, political instability and the state's urgent demand for revenue led to high taxes and fiscal predation by local officials, especially under the later Ptolemies. These would have weakened the incentives of landowners to adopt technologies that would raise productivity, even if they could afford them. As argued in [Chapter 5](#), the fixed tax on private land and the formation of larger estates in Roman Egypt probably assisted the diffusion of Hellenistic water-lifting devices.

The reclamation of the Fayyum is one of the clearest examples of Ptolemaic state investment intended to boost aggregate agricultural output.⁶ The chief engineers and their

staffs were paid officials, though they relied on private contractors to perform much of the actual construction of the canal system. Peasants brought in from other areas of Egypt were subject to the standard harvest-tax regime. However, the Ptolemies also provided large grants of land on favorable terms to encourage reclamation. The recipients of 10,000-aroura gift estates provided management and organization, which substituted for the nascent royal bureaucracy there, in exchange for most of the peasants' surplus that would otherwise go to the king. Similarly, cleruchic land allotments to soldiers in the Fayyum suggests that they fulfilled a double purpose of rewarding them for service and making the land productive. However, the absence of secure property rights on these grants suggests that the Ptolemaic regime sought to maintain its soldiers' and high officials' dependence on the king. Rather than turn the task over to property owners, royal officials maintained direct control over agricultural development in the Fayyum, where they grappled with shortages of labor and capital for reclamation.⁷

The privatization of cleruchic land and the auction of state land with the low fixed tax rate at the beginning of the Roman period set the Fayyum on an entirely different path of development. Some of the problems in the Fayyum were geographical and could not necessarily be solved with economic incentives for private investment. Well-positioned fields were fertile and, with the help of irrigation, could even sustain perennial cultivation, but most land was marginal, falling easily out of production if water supplies failed or improper drainage led to salinization. Communal institutions on royal or public land helped peasants manage such risks, though diversified private estates of sufficient size could theoretically have the same function.⁸

Attracting investment required fiscal and property incentives that the Roman state was better able to provide. The fixed tax rate and secure property rights meant that landowners profited from long-term improvements in land productivity. Undesirable marginal land that could not be sold was attached to adjacent private estates. The system of

compulsory services likewise enabled the state to assign marginal land for cultivation to those with sufficient financial means.⁹ Thus Roman landowners were expected to bear greater responsibility for agricultural development, which previously rested on Ptolemaic royal officials. By the third century CE, there were large private estates in the Fayyum of absentee landowners belonging to the urban elite.¹⁰ The Ptolemies, by contrast, prevented the emergence of a landed aristocracy that would have hereditary sources of power independent from service to the king.¹¹

In the Nile Valley, the Ptolemies recognized and reinforced traditional private land rights in exchange for the ability to tax agricultural production. They had no interest in abolishing private ownership for a system of peasant land redistribution overseen by royal officials like the one that prevailed in the Fayyum. The peasants' lack of property rights on royal land in the Fayyum had no fiscal advantage to them because private land in the Nile Valley could be taxed in the same way and at the same rates. Even private land within temple domains came increasingly under the fiscal authority of the king from the late third century BCE onwards. The Ptolemies' legal innovations made it easier to register property and to enter into contracts that would be recognized in court and would lower transaction costs, for which the parties paid taxes and fees to the state. Alexandria and the Greek cities had their own laws of contracting and registration, but these were only partially available in the villages and nome capitals. Those who did not want to pay for or did not have access to a state notary still relied on more informal witness contracts or local temple notaries.¹²

The creation of metropolitan property archives in Roman Egypt probably expanded the market for land and credit. It disentangled property relations from their embeddedness in spatial and social constraints that militated against impersonal markets in Ptolemaic Egypt. They facilitated large credit transactions on the security of real property and the formation of private estates across multiple nomes. Even at the village level, notary officials wrote and registered contracts, making local witnesses and temple notaries

unnecessary, then forwarded copies to the nome capital for updating the property archive, which sent further copies to a central archive in Alexandria.¹³ The edict of 89 CE by the prefect Mettius Rufus, quoted in full in [Chapter 4](#), reorganized the property archive with the explicit aim of facilitating private and public business and preventing contractual fraud. Its dual function was to guarantee the security of property rights and to assess the property qualifications for compulsory services. Though scribal fees contributed to the administrative costs of maintaining this mountain of paperwork, the keeping of the archive was a compulsory service borne by wealthy landowning elites, who collectively benefited the most from its existence.

The economic benefits of Roman rule are difficult to reconcile with the view that Egypt was a special province set aside for exploitation. Rostovtzeff categorically states that Augustus raised the level of taxation in Egypt, but his evidence is unpersuasive.¹⁴ The difficulties in collecting the poll taxes in the 40s and the 50s CE have been attributed to a predatory Roman fiscal policy, especially under the emperor Nero.¹⁵ The decree of the prefect Tiberius Julius Alexander is also evoked in support of this thesis, but its rhetorical stress on the sufferings of the peasantry under Nero was probably in large part propaganda for his successor Galba.¹⁶ While the pressure on tax officials to meet their demands was certainly a factor, it seems likely that this particular crisis was due to a series of poor floods.¹⁷

The Roman fiscal and legal reforms did not benefit all groups equally, and the inequalities probably only increased with population growth. The poll tax was regressive insofar as the wealthier gymnasial and metropolitan groups paid about half of the rate that the poorer villagers paid. As noted in [Chapter 7](#), the term elite is deceptive for these groups because those eligible constituted a high percentage of the nome population. Nevertheless, economic crises as attested in the mid-first century CE Fayyum and in the Delta during the 150s CE could seriously undermine the ability of the rural population to pay.¹⁸ The liability demanded of tax officials, whose task eventually became a compulsory

service, made the system somewhat inflexible in its response to such crises.

Roman land taxation exhibits a similar kind of inequality and inflexibility. It charged private landowners a fixed rate of one artaba per aroura and widely extended that low rate even to owners of private temple land and to public land sold at auction. The cultivators of public land, on the other hand, continued to pay the higher variable rates that had been almost ubiquitous in Ptolemaic Egypt. As noted in [Chapter 5](#), these rates were in principle supposed to be updated annually in accordance with fertility and flood conditions. However, Tiberius Julius Alexander condemns local officials for neglecting this task.¹⁹ There may be some rhetorical exaggeration in these accusations, but it seems indisputable that the annual survey of the land and adjustment of harvest taxes was gradually abandoned during the Roman period.²⁰ It required an edict in 117 CE from the emperor Hadrian, again in response to unusually poor Nile floods, to have the nome governors adjust tax rates according to the actual value of the land.²¹ By the late second century CE, if not earlier, officials would only inspect land and adjust rates for poor fertility or flood conditions in response to declarations submitted by landowners.²²

These factors may have favored the formation of private estates whose owners had sufficient land to diversify their portfolio. One trend was for private landowners to encroach on public land and to treat it as part of their private estate.²³ As demand for land grew, due to demographic or economic growth, privatization would have aggregate social benefits, since property owners had greater incentives to improve and intensify production than tenants on state land. Fiscal institutions must also have contributed to privatization. Land purchased from the state became subject to the low fixed taxes, though private landowners were even willing to take over public land at higher rates. As land surveys became infrequent and the rates became more inflexible, estate owners would find it easier than smallholding peasants on state land to compensate for unexpectedly poor harvests. The outcome of this gradual process of

privatization was that by the fourth century CE public land could be bought and sold and differed from private land only inasmuch as it was charged a higher fixed rate.²⁴

In the Roman period, tenancy and wage labor increasingly replaced the customary tenure by which peasants cultivated state land. Ptolemaic royal and temple officials used various types of leasehold for land under their direct control, which could be ceded among peasants and even inherited but not sold.²⁵ Cleruchic land was often leased by the soldiers to tenants or to middlemen of similar status who managed the allotment for them.²⁶ The owners of fully alienable private land within temple domains or within the royal fiscal domain often leased it to tenants, typically for one year. These tenants on private land in the Ptolemaic period and the first decades of Roman rule likewise had a high social status, similar to that of the owners themselves.²⁷ Since the landowner or tenant had to pay the variable harvest taxes, there was relatively little margin for profit, which may have favored the existence of family farms rather than large estates.²⁸

The development of private estates between the first and third centuries CE sparked a dramatic increase in tenancy and wage agreements that suggest a freer agricultural labor market.²⁹ Private landowners could provide social and economic benefits to their tenants in lieu of the state. Equipment and animals that smallholders might not have been able to afford, as well as loans for expenses, were in some cases offered to the tenants. Landowners also provided seed loans and remissions of rent in the event of disasters, which officials customarily provided to tenants on state land.³⁰ In the third century CE, some large estate owners even began to pay the poll tax on behalf of their wage laborers.³¹ The vulnerability of the rural population to economic crises and inflexible fiscal obligations may have made them more dependent on estate owners, especially after the tax burden began to rise in the later Roman empire.

The transition from a more hierarchical and redistributive Ptolemaic royal economy to the more market-oriented economy of Roman Egypt is visible not only in agriculture

but also in urban craft specialization and the development of long-distance trade. The trade with India and Arabia through the Egyptian Red Sea ports rose substantially with the advent of Roman rule.³² The Roman administration developed the infrastructure of harbors, roads, and way stations to facilitate overland transport from the Nile to the Red Sea and even provided military protection.³³ The new texts and archaeology of the western oases likewise show intense overland trade of cash crops such as cotton and remarkable prosperity from the second to the fourth centuries CE, in contrast to the periods before and after.³⁴ The nome capitals played an active role in these networks as centers of exchange and manufacture, while occupational titles suggest a wide range of urban services and professions.³⁵

It is plausible that the population and the size of cities increased under Roman rule. What little evidence there is has been reviewed in [Chapter 2](#), but is mostly inconclusive.³⁶ The female age distribution in the Roman census records from Egypt is consistent with model-life tables for a population with positive growth of about 0.2%.³⁷ One can estimate the size of several nome capitals in the Roman period, but the only Ptolemaic figure is not comparable because it comes from the undeveloped Arsinoite capital in the mid-third century BCE. On the basis of the limited evidence, however, one can conclude that the nome capitals and other cities in Roman Egypt were large by historical standards.³⁸ Rathbone estimates a total urban population of one to one-and-a-half million people, including Alexandria, in a population of five million, which would imply an urbanization rate of 20–25% compared to just 13% in the year 1882.³⁹ Bagnall and Frier argue for an even larger population in the cities and an urbanization rate as high as 35%.⁴⁰

Even with the abundant sources, quantitative measures of aggregate and per capita economic performance in Ptolemaic and Roman Egypt remain elusive.⁴¹ If production was low at the end of the Ptolemaic period, as seems likely, then there is a good chance that institutional reforms

brought about intensive per capita growth in the early Roman period. The harder question is at what point the increase in population overtook the pace of rising productivity, causing misery especially among the landless and poor. A large population is generally a sign of lower rather than higher living standards overall, even if the rich were flourishing.⁴² On the other hand, the high aggregate production of the Roman empire – compared to other pre-industrial societies – was diffused across a relatively broad social spectrum, visible even in the country villages and the nome capitals of Egypt.⁴³

Continuity and change

The argument in this book ought to signal a new approach to the transition from Ptolemaic to Roman Egypt. As explained in [Chapter 1](#), it was once widely seen in terms of continuity, which dovetailed with the perception that Egypt was an unusual and atypical province of the Roman empire. Since the 1970s historians of Roman Egypt have formed a new consensus, arguing that the Roman conquest marked a dramatic rupture with Ptolemaic institutions. These scholars tend to favor a top-down explanation for this transition, whereby Augustan reforms reorganized Egyptian society. For Bowman and Rathbone land privatization and municipal reform were the major instruments of far-reaching social and economic change.⁴⁴ One of the weaknesses of this view is that they offer no convincing explanation for why the Romans would want or need to impose such comprehensive reforms.

Lewis writes that “the fundamental decision – to impose the cadres of Roman rule with minimum disruption and maximum utilization of existing local institutions – was taken by the first of the Roman rulers, Augustus, in keeping with the traditional policy of the expansionist Republic; the policies and regulations instituted by Augustus were elaborated by his successors in the Principate.” This statement jars with the next sentence and the substance of

his argument, emphasizing “the Roman elements in the organization of Roman Egypt.”⁴⁵ Despite his qualification that there was minimum disruption, Lewis envisions the emperors consciously choosing to penetrate deeply into Egyptian society with Roman institutions. As Haensch rightly observes, in order to make the case that Egypt was not an exceptional province, Lewis as well as Bowman and Rathbone postulate an exceptional policy of reorganizing social, economic, and administrative institutions to match an imperial pattern.⁴⁶

Haensch attributes the continuity between the Ptolemaic and Roman period to Egypt's unique geographical situation.⁴⁷ Echoing a recurrent sentiment among historians of Roman Egypt, this view holds that changes in political regime had little effect on the organization of agricultural production and the administrative structure that it entailed. Such a bottom-up, ecological model of agrarian institutions has also been advocated by some Egyptologists.⁴⁸ However, an approach that reduces institutional change to environmental factors is insufficient to explain the transformation of the Egyptian economy and administration under Roman rule. Many of the changes were gradual but by the third century CE, the whole social structure – from private ownership and tenancy to municipal governance and imperial integration – bears hardly any resemblance to Ptolemaic Egypt, much less to Egypt of the New Kingdom. If Egypt's institutional structure was based on its environment, one would not expect such drastic differences within just two or three centuries of Roman rule.

Each of these explanatory frameworks isolates one important factor determining Egyptian agrarian institutions, but neither offers a balanced picture of continuity and change from Ptolemaic to Roman rule. The approach adopted here has been to specify the relationship between multiple factors rather than looking for a single determinant. These include the hydrology of the Nile, soil fertility, population density, property rights, fiscal institutions, investment patterns, redistributive mechanisms, administrative structures, political stability, and the

behavior of rulers. Both Egypt's unique geography and the decisions of its rulers played an important role but one that cannot be understood without examining a wider array of causal connections and intermediate agents between them. Thus the book began by discussing bottom-up geographical factors shaping agrarian institutions and ended with the top-down effects of political regime change.

Regional differences in population density and agricultural productivity in Egypt, especially between the Fayyum and the Nile Valley, stem from long-term geographical patterns. They help to explain some of the features that are often wrongly attributed to state policies alone. Because the Fayyum region is the source of so much of the evidence for the Ptolemaic and Roman period, there is a strong temptation to regard it as typical of the rest of the country. The prevalence there of state-owned land where peasants had insecure tenure rights formed the basis for the Rostovtzeffian view of the state and the agrarian economy in Greco-Roman Egypt, especially in the Ptolemaic period. Yet even for the Roman period, scholars have only in the last few decades come to appreciate how much more extensive private landownership was in the Nile Valley than Rostovtzeff and others believed.⁴⁹ The prevailing view had been, and arguably still is, that the gradual privatization of cleruchic allotments during the Ptolemaic period formed the basis for private ownership in the Roman period. The regional differences contradict this view because Ptolemaic cleruchic settlement was nowhere more widespread than in the Fayyum, while during the Roman period private land was quantitatively less significant there than in the Nile Valley.⁵⁰

A bottom-up ecological and economic approach makes better sense of the regional pattern of land tenure. The Boserup-Demsetz model suggests that scarcity creates demand for property rights, so one should expect pressure for land privatization wherever population density is highest.⁵¹ Similarly, some of the anthropological literature on peasant societies suggests that communal ownership could emerge endogenously as a risk-sharing strategy

without necessarily being imposed by the state, especially where land is abundant and labor relatively scarce.⁵² Rowlandson was the first to draw attention to this phenomenon in the organization of labor on royal and public land in the Ptolemaic and Roman Fayyum.⁵³ The evidence discussed in [Chapter 3](#) and in the section on customary land rights in [Chapter 4](#) supports her conclusion. It shows a correlation between communal agrarian institutions and extensive land use on the one hand and between privatization and population density on the other.

The limits of this approach become clear when it comes to explaining other aspects of change under Roman rule. The greatest contribution of the new consensus emphasizing institutional discontinuity has been the attention it has drawn to economic development under Roman rule. As the previous section illustrates, the change of regime apparently stimulated agricultural production and population growth in Egypt. This political impact does not, however, eliminate geography as a relevant factor. The natural hydrology and fertility of the soil are not constants that fix population density at one level. The economic and demographic growth of the Roman period may conceivably have been one factor contributing to the gradual privatization of public land, in keeping with the Boserup-Demsetz model.⁵⁴ Obviously, other factors influence the value of land and the development of exclusive legal rights. Like all good social scientific models, it is probabilistic rather than deterministic. Complex historical processes are shaped by the interaction of multiple variables and are not usually conducive to monocausal explanations. Human agency under institutional constraints can alter the natural environment or its significance, creating feedback loops that put pressure on institutions and generate demand for change.

Land privatization under Augustus is cited as one of the most significant institutional reforms, one which supposedly created a market for acquiring private estates for the first time in Egyptian history.⁵⁵ [Chapter 4](#) has sought to dispel or at least substantially qualify this false presupposition. The notion that agricultural land could not be accumulated

through purchases during the Ptolemaic period simply does not hold up in light of the evidence. Private landownership in Roman Egypt emanates from a distinctively Egyptian tradition of property rights. Legal institutions for the conveyance, inheritance, and registration of private land can be traced back centuries earlier. The Ptolemies even strove to reconcile Egyptian and Greek legal traditions and to facilitate transactions by standardizing contractual and judicial rules as well as introducing market controllers (*agoranomoi*) to notarize contracts of sale for immovable property, including agricultural land. At most, the Roman administration encouraged the expansion of the pre-existing land market through institutions such as the property archive (*bibliothekê enkteseôn*) and the protection of landowners' legal rights.

Fiscal reform plays a crucial part in the argument of this book. The prevailing assumption is that the method of land taxation was a perennial feature of Ptolemaic and Roman Egypt, one deeply rooted in tradition and in the annual flood of the Nile.⁵⁶ Admittedly, the harvest-tax regime discussed in [Chapter 5](#) is attested from at least the New Kingdom down to the Ptolemaic period. Any reasonable assessment of the cultivators' ability to pay taxes at such high rates depended on an annual survey of landholdings and flood conditions. Carrying out such surveys was likewise one of the paramount tasks of the royal and temple administration for more than a millennium. Yet the force of tradition only makes it more remarkable that land taxation changed so fundamentally under Roman rule.

The abolition of harvest taxes for private landowners at the beginning of the Roman period is the point where bottom-up environmental explanations of agrarian institutions fall short and top-down political factors appear decisive. By charging a low land tax, typically one artaba per aoura, which the Ptolemies had used only for some privileged cleruchic and temple land, the emperor Augustus or Tiberius effectively reduced the taxes on agriculture. Suddenly there was a strong incentive to acquire private

estates and to invest in their productivity. The new value of land stands in contrast to its historically low cost in ancient Egypt down through the Ptolemaic period.⁵⁷ The long-term consequences were dramatic, but one should not read into these fiscal reforms any conscious attempt to undermine existing Egyptian institutions and replace them with Roman ones. The traditional methods of taxation continued to be used for tenants of public land, but over time the annual survey of agricultural productivity fell into disuse, making way for alternative procedures for claiming tax relief and contributing to the ossification of the rates on public land.

The relatively gradual pace of administrative reform in Roman Egypt has always fit uncomfortably with the supposition of comprehensive Roman reforms.⁵⁸ The interesting question is not so much when the liturgical system was introduced but rather why it ever needed to be. The tax reduction on agriculture at the beginning of Roman rule not only raised the value of land ownership but arguably also increased the pressure on tax farmers and officials, who were accustomed in the Ptolemaic period to siphon off revenue for themselves. As Bingen has argued, it made sense to work on behalf of the state in the Ptolemaic period because the “rent-seeking” opportunities – using one’s influence to command resources at the expense of others – exceeded the potential profits from productive investments in agriculture.⁵⁹ Compulsory services in Roman Egypt seem to have evolved haphazardly, as prefects responded to the chronic failure to find sufficient volunteers who would undertake tax-farming contracts or would accept the liability that came with holding most governmental offices.

Political considerations seem to underlie the reorganization of temple estates under Augustus and the additional financial constraints placed upon them under subsequent emperors. The Roman emperors did not share the Ptolemies’ dependence on the Egyptian priesthood for the legitimacy of their rule to nearly the same extent.⁶⁰ Too close an association with the traditions of Hellenistic monarchy might even jeopardize their standing in Rome. The Roman imperial administration instead cast itself as the

benefactor of Greek urban culture and of property owners to whom it extended its tax privileges.⁶¹ Insofar as Egyptian priestly elites overlapped with these groups, many would have benefited from Roman rule, but it cannot be doubted that the temples themselves lost most of their political and economic significance. The decree of the prefect Petronius (24–21 BCE), which allegedly confiscated temple estates, merely incorporated land leased out or managed by temples into the regular state administration.⁶² Privately owned land within temple estates was treated just like any other private land with the same legal rights and low fixed tax rate.

Rather than seeing top-down reform as the single cause of institutional change, the approach adopted here has been to look for relationships and feedback between multiple variables. Much like the development of compulsory public services, the decline of temple estates under Roman rule seems to have been a symptom of the shift in the sources of power from officeholding to landownership. The agrarian economy was transformed from one dominated by state and temple redistribution to one distinctly more market oriented. The transition from a fiscal regime based on high variable harvest taxes to one based on low fixed taxes was the central link in a complex chain of causation. Its effects were mitigated by other factors such as regional differences in the organization of land tenure, Egyptian traditions of property ownership and inheritance, as well as state and temple administrative structures. All of these underwent their own entangled developments and contributed in their own way to the structure and performance of the agrarian economy.

Even those changes that were clearly imposed from the outside by Egypt's new rulers were embedded within a wider range of interrelated factors. Some of them were addressed in [Chapter 7](#), but it would require a more comprehensive study of the political economy of the Roman empire to explore them adequately. It may strike some readers as counterintuitive that the Roman empire would expect lower taxes from its Egyptian province than the Ptolemies would from their own kingdom, but this is where the evidence leads. It is consistent with the theory that instability would

drive rulers to maximize short-term revenue at the expense of long-term gains. Moreover, fiscal institutions have to be seen partly as an outcome of political bargaining between potentially powerful groups. During the Ptolemaic period military and priestly groups gained privileges that shifted most of the burden onto agricultural producers. The Roman emperors likewise needed to ensure their own security and legitimacy among politically influential groups in Rome, but when it came to their provincial subjects, they shifted the burden more evenly, extending the same modest privileges to a comparatively large and economically diverse mass of property owners and urban residents. Those without property working as tenants or laborers were the ones disadvantaged.

Conclusion

This book has aimed to demonstrate a new approach to continuity and change that bridges the Ptolemaic and Roman periods. In the past decades the gap between them has grown considerably. There are admittedly serious challenges to writing an analytical history of political and economic change over this gap based on the papyrological evidence. The crucial transitional period, the first centuries BCE and CE, are far more sparsely documented than the two centuries before and the two afterwards. It is easy to fall into a web of guesswork that begins to cloud the interpretation of sources. Wherever possible an effort has been made to keep clear the distinction between the hypotheses and the actual evidence, so that it would be possible to falsify them if they were incorrect or inappropriate. Often the evidence itself is controversial, and getting at the most relevant data is not always possible, but one can at least hope that future publications will sort out many of these problems, so that subsequent scholars can better evaluate the claims presented here.

Studying the transition from Ptolemaic to Roman Egypt holds out tremendous possibilities for shedding light on the relationship between state formation and economic history.

It serves as a case study for divergent trends in the competitive interstate environment of the Hellenistic world and in the unified Mediterranean under Roman imperial rule. No area of the ancient Mediterranean has produced better data for social and economic history than Egypt. This corpus allows one to engage with modern social scientific literature in productive ways, not just using the theories to sketch out hypothetical scenarios but also using the evidence to test them.

There are, of course, limitations to how much one can extrapolate from a single case. By referring occasionally to comparative studies from outside the field of ancient history, the book tries to point the reader to independent cases where the same logic seems to hold true. The experiences of other areas of the Mediterranean world that became Roman provinces were undoubtedly different. In view of their unique histories there was no such thing as a typical province. What is sure is that during most of the period covered here there was only one Roman empire holding them together, so searching for some pattern of provincial administration is a worthwhile endeavor. The advantage of focusing on a single area across time is that it allows one to control for environmental and cultural factors in order to isolate the effects of political change. For ancient historians, this makes Egypt a rare opportunity.

¹ Rostovtzeff (1929: 342–3, 362–3).

² Saller (2005); Hitchner (2005); Scheidel (2007); Morris et al. (2007).

³ Rathbone (2007b: 705–18); Jördens (2009: 511–14).

⁴ Manning (2007: 435–6); similarly, Rathbone (2000: 51–2).

⁵ Johannesen (1923); Fraser (1972: I 425–34); Crawford (1979: 138–41); Thompson (1984: 365–9); Wilson (2002: 7–9).

⁶ Thompson (1999a: 109, 112); Rathbone (2000: 46–8, 51); Manning (2003: 103–8).

⁷ Crawford (1971: 117–21).

⁸ Cf. Eyre (1997: 382–4).

⁹ Rowlandson (1996: 88–92).

- 10 Rathbone (1991: 14–22, 44–58).
- 11 Rowlandson (2007a).
- 12 For market controllers (*agoranomoi*) in the countryside, see Pestman (1978).
- 13 Husselman (1970); Depauw (2003); Muhs (2005a).
- 14 Rostovtzeff (1929: 346, 354–6), who cites: Strabo's (17.1.53) account of the revolt of the Thebaid in 29 BCE, the new poll tax, for which he doubts Ptolemaic precedents, and Philo's (*De specialibus legibus*) highly rhetorical account of the sufferings of taxpayers in Egypt.
- 15 Milne (1927); Rostovtzeff (1929: 346–7, 350–2); Bell (1938); cf. Hanson (1988).
- 16 On Tiberius Julius Alexander, see Turner (1954) and Chalon (1964: 43–52, 55–68); for rhetorical exaggeration, see Jördens (2009: 306); *contra* Rostovtzeff (1929: 360–2).
- 17 Hanson (1988: 276–7); Jördens (2009: 306–9).
- 18 Lewis (1993d); Jördens (2009: 305–9).
- 19 Chalon (1964), §15, lines 55–9; Jördens (2009: 278–9).
- 20 Jördens (2009: 103–6).
- 21 P. Giss. I 4 = W. Chr. 351 = Sel. Pap. II 354 (118 AD, Apollonopolite Heptakomias); Jördens (2009: 473–7).
- 22 Jördens (2009: 111–20).
- 23 Rowlandson (1996: 63–9, 97–101; 2006).
- 24 Bowman (1985: 148–9); Rowlandson (1996: 68–9).
- 25 See Chapter 4.
- 26 Bingen (2007 [1973]: 109–12; 2007 [1975]: 119–120; 2007 [1978b]: 209–10; 2007 [1979]; 2007 [1983]).
- 27 Felber (1997: 99–115); Rowlandson (1996: 273–4, 276–7).
- 28 Felber (1997: 123–4, 129, 142–50); cf. Clarysse (1979a: 733–5), who notes one eighty-aroura Egyptian estate, the largest attested (but its status is not given), several fifteen- to thirty-five-aroura private estates, and many smaller ones.
- 29 Rowlandson (1996: 202, 206–8, 276–7).
- 30 Rowlandson (1996: 213–28, 222–4).
- 31 Rathbone (1991: 130–5, 404–7); cf. P. Louvre I 51, lines 11–12, with Jördens' comments, pp. 254–5.
- 32 Strabo 17.1.13; Pliny, *Naturalis historia* 6.101; Sidebotham

- (2011).
- 33 Bagnall and Rathbone (2004: 279–92); Bagnall (2005: 196); Adams (2007: 220–34, 252–3); Jördens (2009: 424–9).
 - 34 Bagnall and Rathbone (2004: 249–77, esp. 249–50); Bagnall (2005: 196–7; 2008: 29–30); Adams (2007: 235–9, 252–3).
 - 35 Van Minnen (1986; 1987); Alston and Alston (1997: 205–7); Bagnall (1993: 78–92; 2005: 195, 199); Ruffing (2008: I 279–361, especially 358–61) is a detailed study of the occupations, arguing for a high degree of market-oriented specialization in Roman Egypt, especially in cities on transport routes.
 - 36 Cf. Rathbone (1990).
 - 37 Bagnall and Frier (1994: 87–8).
 - 38 Rathbone (1990: 119–22); Tacoma (2006: 39–55).
 - 39 Rathbone (1990: 121).
 - 40 Bagnall and Frier (1994: 53–6); Frier (2001: 141).
 - 41 See Bowman (2009) with Bagnall's (2009) response.
 - 42 Frier (2001).
 - 43 Scheidel (2006: 43–5, 48–54).
 - 44 Bowman and Rathbone (1992).
 - 45 Lewis (1970a: 13–4; cf. 1993a: 276–7, 281).
 - 46 Haensch (2008: 101).
 - 47 Haensch (2008: 100).
 - 48 For example, Eyre (1997; 2004).
 - 49 Rowlandson (1996: 63–9).
 - 50 Rowlandson (2006: 180–1).
 - 51 Boserup (1965); Demsetz (1967); cf. Stone (2001) and Merrill (2002).
 - 52 Park (1992); Platteau (1996; 2003); Nugent and Sanchez (1998).
 - 53 Rowlandson (1996: 82).
 - 54 Cf. Rowlandson (1996: 63–9, 97–101).
 - 55 Lewis (1970a: 8–9); Rathbone (1993: 110–11); Bowman and Rathbone (1992: 111–12).
 - 56 Déléage (1934: 111–12); Brunt (1975: 137); Bonneau (1979: 62); Jördens (2009: 95–111).
 - 57 K. Baer (1962).
 - 58 Hagedorn (2007); Haensch (2008).

- ⁵⁹ Bingen (2007 [1984]: 193); for the concept of rent-seeking, cf. Buchanan (1980) and Lambsdorff (2002).
- ⁶⁰ Jördens (2009: 41–6).
- ⁶¹ Good illustrations include: Nero's letter to the gymnasial group of the Arsinoite nome = SB XII 11012; the edict of Ti. Julius Alexander of 69 CE = Chalon (1964), §7–8, lines 26–32, about exemptions from harvest taxes, and the edict of Mettius Rufus of 89 CE = P. Oxy. II 237, col. 8, lines 27–43, about facilitating private business.
- ⁶² P. Tebt. II 302 (71/72 CE; Tebtunis, Arsinoite).

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